

## On the Family Nannastacidae (Crustacea, Cumacea) from the Australian Museum Collection

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**ABSTRACT.** 108 species and 10 genera of Nannastacidae were identified in collections of the Australian Museum from samples around Australia; 48 are described as new species: *Campylaspides stanescui*, *Campylaspis adami*, *C. adelae*, *C. aurelianii*, *C. berentsae*, *C. chisamerai*, *C. cursaruae*, *C. dumitrumurariui*, *C. elenaionuti*, *C. gabrielamircea*, *C. georgetae*, *C. gherasimi*, *C. guerragarciai*, *C. hangiuae*, *C. heardi*, *C. keablei*, *C. lowryi*, *C. marinescui*, *C. matacheae*, *C. mioarae*, *C. oanae*, *C. oanalexandru*, *C. oneai*, *C. panai*, *C. paucai*, *C. popai*, *C. radui*, *C. roccatagliatai*, *C. sienkiewiczi*, *C. stanae*, *C. udrescui*, *C. vasilescui*, *C. wilsoni*, *Nannastacus papadopoli*, *Procampylaspis capraruae*, *P. corberai*, *Scherocumella weinbergae*, *Scherocumella wittmanni*, *Schizocuma antipai*, *Schizocuma bacescui*, *Schizotrema dumitriui*, *Schizotrema leswatlingi*, *Schizotrema radui*, *Schizotrema zimmeri*, *Styloptocuma anae*, *Styloptocuma angelae*, *Styloptocuma aurorae*, and *Styloptocuma halei*. An additional taxon is recognized as *Styloptocuma* sp. but remains undescribed. Additionally, two genera—*Campylaspides* Fage, 1929, and *Schizocuma* Băcescu, 1972—and the following 15 species are newly recorded from Australia: *Cumella bunakenensis* Petrescu, 1995, *Cumella indosinica* Zimmer, 1952, *Nannastacus antipai* Petrescu, 1995, *N. gamoi* Băcescu, 1992, *N. mitrei* Petrescu, 1995, *N. nyctagineus* Gamă, 1962, *N. stebbingi defformis* Fage, 1945, *N. wisseni* Petrescu, 1997, *Procampylaspis andamanensis* Watling & Angsupanich, 2002, *P. bispinosa* Ledoyer, 1988, *Schizotrema bidens* Fage, 1945, *Schizotrema bifrons* Calman, 1911, *Schizotrema depressum* Calman, 1911, *Schizotrema sakaii* Gămo, 1964, and *Schizotrema sordidum* Calman, 1911.

**KEYWORDS.** Crustacea; Cumacea; Nannastacidae; taxonomy; new species; new records.

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## Introduction

The most important studies on Australian Cumacea were made by the famous specialist, Herbert M. Hale, who dealt with 90% of Australian fauna between 1936 and 1949. More recently, Tafe & Greenwood (1996), Gerken (2013) and Petrescu (2004a,b; 2006) brought new data on Bodotriidae, Diastylidae, Nannastacidae and Ceratocumatidae. The first species known from this family from Australia, however, were *Cumella* (*Cumella*) *cyclaspoides*, *Cumella* (*C.*) *gibba*, *C.* (*C.*) *michaelseni*, *Scherocumella* *nasuta*, *S. n. camelus*, *S. n. nasutus*, described by Zimmer (1914) from Shark Bay, Western Australia and also *Cumella* (*C.*) *hispida* Calman, 1911. Foxon (1932) described *Campylaspis* *pileus* from the Great Barrier Reef. Hale added 32 species of Nannastacidae to the Australian list, 29 being new to science. Băcescu (1991) described *Campylaspis* *wardi* and Tafe and Greenwood, 1996 added a new species of *Schizotrema*. Stoddart & Lowry (2003) included 38 species and 2 subspecies of Nannastacidae in their list of Cumacea from Australia. Petrescu (2006) described 29 new species, increasing the number of species to 70.

Material from 404 samples was sorted up to family range and partially identified in Australian Museum and finally in the “Grigore Antipa” National Museum of Natural History, Bucharest, Romania. One hundred eight species and 10 genera of Nannastacidae were identified in these collections, 49 species are described as new, one genus, *Schizocuma* Băcescu, and other 15 species are added to Australian waters. A total of 133 species of Nannastacidae is known now from waters of Australia.

## Material and methods

The material was identified to species in the Australian Museum, Sydney. Drawings and text were compiled at “Grigore Antipa” Museum, Bucharest. Drawings were made with microscopy and camera lucida. Body length is measured between the tip of the pseudorostrum lobes and the posterior margin of the last pleonite.

Specimens are registered in the Australian Museum, Sydney (AM). All AM register numbers are with “P.” prefix and representative specimens are in the “Grigore Antipa” National Museum of Natural History, Bucharest, Romania

(MGAB) with CUM prefix. Holotype collection data are given in full here. Specimen collection data for all material examined are derived from the AM database (*EMu*) and given, in full, in a supplementary dataset uploaded at *figshare* and permanently and freely (CC BY 4.0) available via DOI (see Petrescu [2018] in the list of references). Distribution data in the present work is abridged and summarized; it is derived from *EMu*-output May 2017 (Petrescu, 2018). The Australian states and territories are abbreviated as follows: Queensland, *QLD*; New South Wales, *NSW*; Victoria, *VIC*; Tasmania, *TAS*; South Australia, *SA*; Western Australia, *WA*; and the NT, *NT*. The Arafura Sea lies on the Sahul Shelf between New Guinea (Indonesian West Papua) and northern Australia; the Coral Sea lies off the Great Barrier Reef, between northeastern Australia, Papua New Guinea and several South Pacific countries; the Tasman Sea lies between Australia and New Zealand.

## Genus *Campylaspides* Fage, 1929

**Diagnosis.** Rudimentary eye lobe. Dactylus of maxilliped 2 like a trident. Female with 3 exopods and male with 5 exopods.

### *Campylaspides stanescui* sp. nov.

Fig. 1

**Holotype** subadult ♀, 3.19 mm, P.88258, Tasman Sea, Lord Howe Rise, -27.983° 162.859°, 1250 m, epibenthic sled, coarse sediment with pumice, 6 May 1989, J.K. Lowry & party, RV *Franklin*, FR0589-28, in AM.

**Etymology.** The species is named in honour of my colleague, Dr Mihai Stanescu, specialist in Lepidoptera, as a sign of sincere friendship and appreciation of his work.

**Diagnosis.** Carapace almost 0.5 body length, carpus of 2nd maxilliped with medial apophysis, long terminal spines; maxilliped 3 basis 0.5 entire length; dactylus 4.1 propodus length; uropodal peduncle 1.86 pleonite 6 length, 1.09 endopod length.

**Description.** Carapace 0.49 body length; 1.9 as long as high, 1.25 as long as wide; pseudorostrum 0.22 carapace

### Key to species of *Campylaspides* from Australian waters

1	Maxilliped 3 with spines .....	2
—	Maxilliped 3 without spines .....	5
2	Carapace integument with spines or mamelons .....	3
—	Carapace integument smooth .....	<i>C. diva</i> Mühlenhardt-Siegel, 2005
3	Carapace integument with mamelons .....	<i>C. grandis</i> Fage, 1929
—	Carapace with spines .....	4
4	Maxilliped 2 carpus with spines .....	<i>C. abyssotrucidatus</i> Watling & Gerken, 1999
—	Maxilliped 2 carpus with setae .....	<i>C. echinata</i> Ledoyer, 1988
5	Maxilliped 2 with spines .....	6
—	Maxilliped 2 with 1 spine and 1 apophysis .....	<i>C. stanescui</i> sp. nov.
6	Maxilliped 2 carpus with 2 spines, 1 much longer .....	<i>C. canariensis</i> Jones, 1973
—	Maxilliped 2 carpus with 2 short spines .....	<i>C. spinifer</i> Jones, 1973

length, 3.4 ocular lobe length; ocular lobe without eyelobe; marked anterior notch; few simple setae on anterior half (Fig. 1 A,B). —*Antenna 1* peduncle article 1 1.1 rest of article's length; article 2 1.3 article 3 length; main flagellum 2.5 article 3 length; accessory flagellum with 1 article; aesthetascs 2 main flagellum length (Fig. 1 C). —*Maxilliped 2* basis with 2 simple setae; ischium fused with merus; carpus 1.6 merus length, second longest article, with 1 spine and 1 large apophysis medially, 1 simple and 1 plumose seta; propodus 0.64 carpus length, with 1 robust spine; dactylus with 3 terminal, very long, spines (Fig. 1 D). —*Maxilliped 3* basis 0.5 entire length, with 6 plumose setae, setulated laterally; ischium 0.5 merus length, serrated medially; merus with 2 plumose and 4 simple setae; carpus 0.75 merus length, with 1 plumose seta; propodus 0.6 carpus length, with 2 pappose setae; dactylus 0.5 propodus length, with 3 terminal simple setae; with exopod (Fig. 1 E). —*Pereopod 1* basis 0.43 entire length, 1 pappose and 2 plumose setae; ischium with plumose seta on medial margin; merus 4 ischium length, with 4 simple setae, 2 much longer setae on medial margin, 1 plumose and 1 pappose seta; carpus 1.5 merus length, with serrated medial margin, with 5 simple, plumose and pappose setae; propodus 0.8 carpus length, setulated medially, with 5 simple, plumose and pappose setae; dactylus 0.7 propodus length, with 3 simple subterminal and 3 terminal setae shorter than dactylus; with exopod (Fig. 1 F). —*Pereopod 2* (Fig. 1 G) basis 0.31 entire length, with 5 simple setae; ischium with 1 pappose seta; merus 3.7 ischium length, with 1 pappose seta; carpus 1.8 merus and ischium length, with 1 pappose and 2 simple setae; propodus 0.3 carpus length; dactylus 4.1 propodus length, with 4 short simple setae; with exopod (Fig. 1 G). —*Pereopod 3* (Fig. 1 H) basis 0.5 entire length, with 1 simple seta; ischium with 2 plumose setae; merus 1.8 ischium length, with 1 plumose seta; carpus 2.1 merus length, with 1 annulate seta; propodus 0.52 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta (Fig. 1 H). —*Pereopod 4* basis 0.4 entire length; ischium and merus with 1 plumose seta; carpus 1.3 ischium and merus length, with 1 annulate seta; propodus 0.5 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta (Fig. 1 I). —*Pereopod 5* basis 0.38 entire length; carpus as long as ischium and merus length, with 1 annulate seta; propodus 0.43 carpus length, with 1 annulate seta;

dactylus fused with terminal robust seta (Fig. 1 J). —*Uropod* peduncle 1.86 pleonite 6 length, 1.09 endopod length, with serrated margins; exopod 0.9 endopod length, 1 subterminal simple and 1 terminal microserrate seta; endopod with short terminal microserrate seta, 0.3 endopod length, 2 simple setae medially (Fig. 1 K).

**Remarks.** The female is known for only two species of the genus, *Campylaspides grandis* Fage (1929) from the Atlantic Ocean (Morocco) and *C. stanescui* sp. nov. from the Pacific Ocean (Australia). The main shared character is the aspect of the propodus and dactylus of maxilliped 2. It differs from this species with: carapace without spiny integument, the carpus of maxilliped 2 with medial apophysis instead of setae (unique character within the known species of the genus), maxilliped 2 with a large apophysis on the carpus instead of 3 strong teeth, uropod with longer exopod, and endopod with 2 instead of 4 medial setae. The nearest known congener, *C. echinata* Ledoyer, 1988 from the Indian Ocean (Comoro Islands), shares a similar aspect of the propodus and dactylus of maxilliped 2. The new species is close to other species of the genus, having a similar propodus and dactylus of maxilliped 2, pereopod 2 with long and slender dactylus, namely *C. diva* Mühlhardt-Siegel, 2005 from the Angola Basin, *C. spinifera* Jones, 1973 from Recife, western Atlantic, and *C. abyssotrucidatus* Watling & Gerken, 1999, from Brazil.

**Distribution.** Tasman Sea (between Australia and New Zealand), Lord Howe Rise, at 1250 m depth. This is the first record of the genus *Campylaspides* from waters off Australia.

## Genus *Campylaspis* Sars, 1865

**Diagnosis.** Carapace longer than 0.4 body length; maxilliped 1 with 3 articles; maxilliped 2 dactylus ending in 3 diverging spines; pereopod 2 dactylus with usual or digitiform extremity; female maxilliped 3 and pereopods 1 and 2 and male maxilliped 3 and pereopods 1-4 with exopods.

**Remarks.** Thirty-five species were previously known from Australia (Petrescu, 2006), and 31 new species are added herein. A total of 53 species were found in the Australian Museum collection.

### Key to species of *Campylaspis* from Australian waters

1	Eye lenses present .....	2
—	Eye lenses absent .....	17
2	Carapace with tubercles, spines, carinae or a lateral furrow .....	3
—	Carapace smooth, without tubercles, spines, carinae or a lateral furrow .....	<i>C. aureliani</i> sp. nov.
3	Uropodal peduncle 3 as long as its endopod .....	<i>C. thompsoni</i> Hale, 1945
—	Uropodal peduncle less than 3 as long as its endopod .....	4
4	Carapace with 2 sulci .....	<i>C. wilsoni</i> sp. nov.
—	Carapace with 1 sulcus .....	5
5	Maxilliped 3 medial margin of merus to propodus serrate .....	6
—	Maxilliped 3 medial margin of merus to propodus smooth .....	16
6	Maxilliped 3 large .....	7
—	Maxilliped 3 slender .....	14

7	Carapace lateral sulcus with a transverse ridge .....	<i>C. berentsae</i> sp. nov.
—	Carapace lateral sulcus without transverse ridge .....	8
8	Carapace with circular sulcus .....	<i>C. lowryi</i> sp. nov.
—	Carapace with normal sulcus .....	9
9	Pereopod 2 dactylus with tapering tip .....	10
—	Pereopod 2 dactylus without tapering tip .....	11
10	Pereopod 2 dactylus 3.22 propodus length .....	<i>Campylaspis similis</i> Hale, 1945
—	Pereopod 2 dactylus 2.33 propodus length .....	<i>C. adelae</i> sp. nov.
11	Pereopod 2 with acute dactylus .....	12
—	Pereopod 2 with not acute dactylus .....	<i>C. latidactyla</i> Hale, 1945
12	Uropodal endopod with 5 medial setae .....	<i>C. roscida</i> Hale, 1945
—	Uropodal endopod with 3 medial setae .....	<i>C. minor</i> Hale, 1945
14	Pereopod 2 with long dactylus .....	15
—	Pereopod 2 with short dactylus .....	<i>C. wardi</i> Băcescu, 1991
15	Maxilliped 3 merus with serrate outer margin .....	<i>C. echinata</i> Hale, 1945
—	Maxilliped 3 merus with smooth outer margin .....	<i>C. pustulosa</i> Hale, 1945
16	Carapace with a lateral carina .....	<i>C. uniplicata</i> Hale, 1945
—	Carapace without lateral carina .....	<i>C. unisulcata</i> Hale, 1945
17	Carapace with lateral sulcus .....	18
—	Carapace without lateral sulcus .....	43
18	Lateral sulcus with transverse ridge .....	19
—	Lateral sulcus without transverse ridge .....	26
19	Carapace with small tubercles .....	20
—	Carapace without tubercles .....	23
20	Uropodal peduncle with longitudinal ridge .....	<i>C. angelae</i> Petrescu, 2006
—	Uropodal peduncle without longitudinal ridge .....	20
21	Pereopod 2 dactylus with pedunculate tip .....	<i>C. gabrielamirceai</i> sp. nov.
—	Pereopod 2 dactylus without pedunculate tip .....	21
22	Maxilliped 2 with long dactylus .....	<i>C. tasmaniensis</i> Petrescu, 2006
—	Maxilliped 2 with short dactylus .....	<i>C. chisamerai</i> sp. nov.
23	Carapace with 3 lateral sulci .....	<i>C. trisulcata</i> Petrescu, 2006
—	Carapace with 1 sulcus .....	24
24	Carapace with dorsal translucent lenses .....	<i>C. edenensis</i> Petrescu, 2006
—	Carapace without dorsal translucent lenses .....	25
25	Pereopod 2 dactylus with long terminal seta .....	<i>C. gherasimi</i> sp. nov.
—	Pereopod 2 dactylus with short terminal seta .....	<i>C. oneai</i> sp. nov.
26	Carapace with small tubercles and spines .....	27
—	Carapace without tubercles and spines .....	30
27	Carapace with 2 lateral sulci .....	28
—	Carapace with 1 sulcus .....	29
28	Uropod peduncle with 8 medial setae .....	<i>C. matacheae</i> sp. nov.
—	Uropod peduncle with 9 longer medial setae and 16 shorter ones .....	<i>C. oanae</i> sp. nov.
29	Pereopod 2 dactylus propodus length .....	<i>C. australiensis</i> Petrescu, 2006
—	Pereopod 2 dactylus propodus length .....	<i>C. guerragarciae</i> sp. nov.

30	Carapace with 2 lateral sulci .....	31
—	Carapace with 1 lateral sulcus .....	33
31	Pereopod 2 dactylus 3.8 propodus length .....	<i>C. udrescui</i> sp. nov.
—	Pereopod 2 dactylus shorter 3.8 propodus length .....	32
32	Pereopods 3–5 dactylus fused with terminal robust seta .....	<i>C. georgetae</i> sp. nov.
—	Pereopods 3–5 dactylus not fused with terminal seta .....	<i>C. sienkiewiczi</i> sp. nov.
33	Pereopods 3–5 with short and robust articles .....	<i>C. roccatagliatai</i> sp. nov.
—	Pereopods 3–5 with long and slender articles .....	34
34	Carapace with long pseudorostrum .....	<i>C. pileus</i> (Foxon, 1932)
—	Carapace with short pseudorostrum .....	35
35	Carapace with circular sulcus .....	<i>C. radui</i> sp. nov.
—	Carapace with normal sulcus .....	36
36	Carapace with dorsal transverse ridges .....	<i>C. nowrae</i> Petrescu, 2006
—	Carapace without dorsal ridges .....	37
37	Pereopod 2 dactylus with terminal tapering tip .....	38
—	Pereopod 2 dactylus without terminal tapering tip .....	39
38	Maxilliped 3 merus longer than 1.7 ischium length .....	40
—	Maxilliped 3 merus 1.7 ischium length .....	<i>C. keablei</i> sp. nov.
39	Maxilliped 3 with robust articles .....	<i>C. vasilescui</i> sp. nov.
—	Maxilliped 3 with slender articles .....	<i>C. stanae</i> sp. nov.
40	Lateral sulcus as long as carapace length .....	41
—	Lateral sulcus shorter than carapace length .....	42
41	Uropodal peduncle with longitudinal crest .....	<i>C. hangiuai</i> sp. nov.
—	Uropodal peduncle without longitudinal crest .....	<i>C. johnstoni</i> Hale, 1937
42	Maxilliped 3 merus with a medial process .....	<i>C. rectangulata</i> Petrescu, 2006
—	Maxilliped 3 merus without medial process .....	44
43	Maxilliped merus 4 ischium length .....	<i>C. anae</i> Petrescu, 2006
—	Maxilliped 3 merus 2.6 ischium length .....	<i>C. dumitrumurariui</i> sp. nov.
44	Carapace with tubercled integument .....	45
—	Carapace with smooth integument .....	52
45	Pereopod 2 dactylus with tapering tip .....	46
—	Pereopod 2 dactylus without tapering tip .....	47
46	Uropodal endopod with 6 setae on medial margin .....	<i>C. mioarae</i> sp. nov.
—	Uropodal endopod without any seta .....	<i>C. thetidis</i> Hale, 1945
47	Pleonite 5 with a transverse constriction .....	<i>C. aspera</i> Hale, 1945
—	Pleonite 5 without transverse constriction .....	48
48	Maxilliped 3 carpus, 2nd longest article, with special medial setae .....	<i>C. heardi</i> sp. nov.
—	Maxilliped 3 carpus shorter than merus .....	49
49	Pereopod 2 dactylus with long terminal seta .....	50
—	Pereopod 2 dactylus with short terminal seta .....	<i>C. paucai</i> sp. nov.
50	Uropodal endopod with 5 medial setae .....	<i>C. adami</i> sp. nov.
—	Uropodal endopod with less than 5 medial setae .....	51
51	Maxilliped 3 merus with a medial process .....	<i>C. marinescui</i> sp. nov.
—	Maxilliped 3 merus without medial process .....	<i>C. panai</i> sp. nov.

52	Pereopod 2 dactylus with pappose setae .....	<i>C. elenaionuti</i> sp. nov.
—	Pereopod 2 dactylus with simple setae .....	53
53	Carapace with prominent anteroventral corner .....	<i>C. oanalexandru</i> sp. nov.
—	Carapace with hardly visible anteroventral corner .....	54
54	Uropodal endopod with 7 medial setae .....	<i>C. popai</i> sp. nov.
—	Uropodal endopod with 4 medial setae .....	<i>C. cursaruae</i> sp. nov.

### *Campylaspis adami* sp. nov.

Fig. 2

**Holotype** subadult ♀, 4.0 mm, P.64741, Australia, NSW, east of Port Jackson, -33.87° 151.38°, 80 m, epibenthic sled, shelly mud, 11 Dec 1980, R.T. Springthorpe, FRV *Kapala*, K80-20-11, in AM.

**Etymology.** The species is dedicated to my colleague Dr Costică Adam, specialist in Malophaga, as a sign of highly appreciation of his work.

**Diagnosis.** Carapace with small tubercles, eyeless ocular lobe; robust maxilliped 3 basis 0.68 rest of article's length; merus to carpus with teeth medially; pereopod 1 basis 0.68 pereopod length; pereopod 2 basis 0.7 pereopod length, dactylus 2.8 propodus length, with terminal simple seta; uropodal peduncle 2.65 pleonite 6, 2.57 endopod length.

**Description.** *Carapace* 0.4 entire length, with small tubercles; 1.38 as long as high; 1.5 as long as wide; *pseudorostrum* 0.2 carapace length; small antennal notch; smooth ventral margin (Fig. 2 A, B). —*Maxilliped* 3 basis 0.68 rest of article's length, setose medially, 1 pappose seta; basis to propodus serrated medially; ischium 0.28 basis length; merus 2.4 ischium length, second longest article, with 9 setulae, 3 teeth and 1 pappose seta; carpus 0.22 merus length, with 2 setulae and 1 pappose seta; propodus 0.94 carpus length, with 4 pappose setae; dactylus 0.4 propodus length, with 3 simple setae; with exopod (Fig. 2 C). —*Pereopod* 1 basis 0.62 rest of article's length, with 2 pappose setae; ischium 0.14 basis length, with 1 tooth and 1 pappose seta; merus, 2nd longest article of pereopod, 3.6 ischium length, with 7 pappose and 3 simple setae; carpus 0.83 merus length, with 6 simple and 4 pappose setae; propodus 0.76 carpus length, with 4 simple and 4 pappose setae; dactylus 0.52 propodus length, with 6 simple setae; with exopod (Fig. 2 D). —*Pereopod* 2 basis 0.7 rest of article's length, with 2 plumose setae; ischium 0.1 basis length; merus 3 ischium length, with 1 simple and 2 pappose setae; carpus 1.6 merus length, with 2 simple and 1 plumose seta; propodus 0.4 carpus length, with 1 simple seta medially; dactylus 2.8 propodus length, with 8 simple; with exopod (Fig. 2 E). —*Pereopod* 3 basis 1.8 rest of article's length; merus 1.14 ischium length, with 1 plumose seta; carpus 1.1 merus length, with 1 plumose and 1 annulate seta; propodus 0.4 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta (Fig. 2 F). —*Pereopod* 4 basis 0.54 rest of article's length; ischium with 1 simple seta; merus 1.6 ischium length, with 1 plumose medially; carpus 2.5 merus length, with 1 simple and 1 annulate seta; propodus 0.17 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta (Fig. 2 G). —*Pereopod* 5 basis 0.16 rest of article's length; merus 1.5 ischium length; ischium and merus with 1 simple seta; carpus 3.3 merus length, with

1 simple and 1 annulate seta; propodus 0.3 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta (Fig. 2 H). —*Uropod* peduncle 2.65 pleonite 6 length, with serrated margins, 2.57 endopod length; exopod as long as endopod, with 3 simple, 1 subterminal simple and 1 terminal seta 0.77 exopod length; endopod with serrated margins, with 5 simple and 1 terminal robust simple seta 0.66 endopod length (Fig. 2 I).

**Remarks.** *Campylaspis adami* sp. nov. is closely related to *C. roscida* Hale, 1945 with the integument of the carapace having with tiny tubercles, and being opaque in the new species (glassy in Hale's), and the uropodal endopod with 5 setae. The new species differs in the basis of maxilliped 3 lacking setae on medial margin, pereopod 1 with more numerous setae, and a longer uropodal peduncle.

**Distribution.** Australia: NSW—east of Port Jackson, at 80 m depth.

### *Campylaspis adelae* sp. nov.

Fig. 3

**Holotype** adult ♂, 3.46 mm, P.64692, Australia, NSW, Jervis Bay, off Moona Moona Creek, -35.0483° 150.6867°, 8 m, airlift, sediment, 17 Dec 1982, P.B. Berents, NSW 262, in AM. **Paratype:** 1♂, P.65553, Australia, WA, North West Shelf, -19.94° 117.8983°, 44 m, 25 Jun 1983, CSIRO North-West Shelf project, FRV *Soela*, 03-B2-S | 0383 B02 S, in AM.

**Etymology.** The species is dedicated in honour of my beloved mother, Adela, as a sign of gratitude and love for her devotion shown to me during my life and especially during my medical problems.

**Diagnosis.** Carapace 0.4 body length; ocular lobe with 3 large lenses; pereopod 2 dactylus 2.2 propodus length, with digitiform tip; uropodal peduncle 2.5 pleonite 6 length, with 5 plumose, 2.46 endopod length; endopod 1.4 exopod length, endopod with 9 microserrate setae.

**Description.** *Carapace* 0.4 body length; 1.8 as long as high; large lateral sulcus, 0.85 of carapace length, almost straight dorsally; ocular lobe with 3 large lenses; *pseudorostrum* 0.38 carapace length (Fig. 3 A). —*Maxilliped* 3 with large basis, 0.68 rest of article's length, with 5 plumose setae; merus 2.7 ischium length, with 3 plumose setae; carpus 0.37 merus length, with 1 plumose seta; propodus 1.1 carpus length; dactylus 0.33 propodus length, with 4 terminal simple setae; with exopod (Fig. 3 B). —*Pereopod* 1 basis 0.8 rest of article's length, with 2 plumose setae; merus, 2nd longest article, 2.25 ischium length, with 4 plumose and 2 simple setae; carpus 0.8 merus length, with 2 plumose setae; propodus 0.7 carpus length; dactylus 0.8 propodus length, with 4 terminal simple setae; with exopod (Fig. 3 C). —*Pereopod* 2 basis 0.7 rest of article's length, with 2

plumose setae; merus 0.4 ischium length, with 2 plumose setae; carpus 1.5 merus length, with 1 simple and 4 plumose setae; dactylus 2.2 propodus length, with 11 simple setae and digitiform tip; with exopod (Fig. 3 D). —*Pereopods 3, 4* with decreasing basis and increasing carpus; basis to merus with 1 simple seta, carpus with 2 annulate setae, propodus with 1 annulate seta; dactylus with 1 terminal simple seta; with exopods (Figs 3 E, F). —*Pereopod 5* basis 0.6 pereopod 4 basis; basis to merus with 1 simple seta; merus 2 ischium length; carpus 1.2 merus length, with 2 annulate setae; propodus 0.16 carpus length, with 1 annulate seta; dactylus 0.6 propodus length with 1 terminal simple seta (Fig. 3 G). —*Uropod* peduncle 2.5 pleonite 6 length, 2.5 endopod length with 5 plumose setae and serrate margins; endopod 1.4 exopod length; exopod with 2 simple setae; endopod with 9 microserrate and 1 terminal simple seta (Fig. 3 H).

**Remarks.** *Campylaspis adelae* sp. nov. is closely related to *C. minor* Hale, 1945, but with maxilliped 3 with 3 vs. 2 plumose setae on the basis; no setae on the ischium and merus vs. numerous short setae; dactylus with 4 vs. 2 terminal setae on dactylus; pereopod 1 with 2 plumose setae on basis vs. none, dactylus with 3 simple terminal short setae vs. 2 plumose long and 1 simple short seta; pereopod 2 with 2 setae on basis vs. none, dactylus with simple setae vs. plumose setae; 1.5 longer uropodal peduncle.

**Distribution.** Australia: NSW—off Moona Moona Creek, Jervis Bay, at 8 m depth.

### *Campylaspis anae* Petrescu, 2006

*Campylaspis anae* Petrescu, 2006: 131, figs 1, 2.

**Material examined:** 1♂, P.88254.

**Distribution.** Arafura Sea and Australia: WA—North West Shelf; NT; and VIC—Gabo Island, from 1.5–210 m depth (Petrescu, 2006). The species is now reported from NSW—east of Port Jackson, at 132–135 m depth.

### *Campylaspis angelae* Petrescu, 2006

*Campylaspis angelae* Petrescu, 2006: 132–133, figs 3, 4.

**Material examined:** 1♀, P.88253.

**Distribution.** Australia: NSW—shelf break off Nowra, at 204 m (Petrescu, 2006), and now from east of Long Reef Point, at 176 m depth.

### *Campylaspis aspera* Hale, 1945

*Campylaspis aspera* Hale, 1945: 209, figs 45, 46.—Stoddart & Lowry, 2003: 412.

**Material examined:** 1♀, P.64651; 1♀, P.88227; 1♀, P.64705; 1♀, 1♂, P.64739; 3♀♀, P.88225; 1♀, P.88226; 5♂♂, P.64742; 2♀♀, P.64743; 1♂, P.88228; 1 subadult ♂, P.65041; 1♀, P.65049; 1♀, P.65050; 1♀, P.88224; 1 subadult ♂, P.65549; 1♀, P.65559; 1♀, P.65561.

**Distribution.** Australia: NSW—Bass Point, Barrenjoey Headland, Broken Bay, Long Reef Point, Merimbula, Port Jackson, Providential Head, at 56–1115 m; VIC—Bass Strait, Gabo Island, at 118–131 m; and WA—North West Shelf, at 81–84 m depth (Petrescu, 2018).

### *Campylaspis aureliani* sp. nov.

Fig. 4

**Holotype** subadult ♂, P.65051, Australia, NSW, Bass Point, -34.6° 150.9°, 35–40 m, Smith-McIntyre Grab, 3–18 Jan 1991, The Ecology Lab for RMI/Pioneer Project, 4-217, in AM.

**Etymology.** The species is dedicated in honour of Dr Aurelian Popescu, palaeontologist, specialist in fossil mammals from the Oltenia Museum, Museum of Natural Sciences, Craiova, as a sign of deep respect and friendship.

**Diagnosis.** Carapace, 0.5 body length, small eyelobe with 3 lenses; maxilliped 3, robust; merus 2.7 ischium length; pereopod 2 dactylus 3.2 propodus length, with tapering end; uropodal peduncle 2.3 pleonite 6 length, 2.3 endopod length; exopod 0.8 endopod length; endopod with 4 setae.

**Description.** Carapace 0.5 body length; smooth integument, 2 as long as high, 1.25 as long as wide; pseudorostrum 0.25 carapace length; small antennal notch; smooth ventral margin; small eyelobe with 3 lenses; siphon 0.25 carapace length (Fig. 4 A,B). —Antenna 1 with robust articles; peduncle article 1 0.8 rest of articles; article 2 1.3 article 3 length; main flagellum 1.4 peduncle article 3 length; accessory flagellum with 1 article; aesthetascs 1.6 main flagellum length (Fig. 4 C). —Maxilliped 3 robust, large basis, 0.9 rest of article's length, with 1 simple and 4 plumose setae; ischium 0.16 basis length, with 1 simple seta; merus 2.7 ischium length, with 1 plumose and 7 simple setae; carpus 0.59 merus length, with 2 simple and 1 pappose seta; propodus as long as carpus, with 1 plumose and 3 pappose setae; dactylus 0.46 propodus length, with 1 terminal simple seta; with exopod (Fig. 4 D). —Pereopod 1 basis 0.68 rest of article's length, with 1 pappose, 1 simple and 1 plumose seta; merus 2.4 ischium length, with 8 pappose and 2 simple setae; carpus 0.9 merus length, with 4 pappose and 3 simple setae; propodus 0.7 carpus length, with 4 pappose and 2 simple setae; dactylus 0.6 propodus length, with 4 simple setae; with exopod (Fig. 4 E). —Pereopod 2 basis 0.57 rest of article's length, with 1 simple and 2 pappose setae; ischium with 1 pappose seta; merus 2.8 ischium length, with 2 pappose and 1 simple seta; carpus 2 merus length, with 1 pappose and 2 simple setae; dactylus 3.2 propodus length, with 8 simple setae, with digitiform tip; with exopod (Fig. 4 F). —Pereopod 3 basis 1.73 rest of article's length, with 1 plumose seta; ischium with 2 simple setae; merus 1.4 ischium length, with 1 simple seta; carpus 1.1 merus length, with 1 annulate seta; propodus 0.54 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta; with exopod (Fig. 4 G). —Pereopod 4 basis 1.5 rest of article's length; ischium 0.6 merus length, with 1 simple seta; carpus as long as merus, with 1 simple and 1 annulate seta; propodus 0.6 carpus length, with 1 annulate seta; dactylus fused with 1 terminal robust seta; with exopod (Fig. 4 H). —Pereopod 5 basis 0.8 rest of article's length; ischium 0.6 merus length, with 1 simple seta; merus with 1 simple seta; carpus 1.2 merus length, with 1 simple and 1 annulate seta; propodus 0.58 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta (Fig. 4 I). —Uropod peduncle 2.3 pleonite 6 length, 2.3 endopod length; exopod 0.8 endopod length, with 4 simple setae, 1 robust terminal seta 0.6 exopod length; endopod, 1.2 exopod

length, with 2 subterminal robust and 4 microserrate setae, 1 terminal microserrate seta 0.51 endopod length (Fig. 4 J).

**Remarks.** The new species is related to other species with smooth carapace and eyelobe with lenses, *C. thompsoni* Hale, 1945 from Australia, *C. amblyoda* Gamô, 1960 from Japan and SE Asia, *C. kiiensis* Gamô, 1960 and *C. totzkei* Mühlenhardt-Siegel, 2000 from Sri Lanka; only the new species and *C. totzkei* have no dorsal keel on the carapace; only *C. aureliani* has pereopod 2 dactylus with a tapering end, and the uropodal endopod has 5 setae as in *C. totzkei* (4 or 7 in the remaining species).

**Distribution.** Australia: NSW—Bass Point, at 40 m depth.

### *Campylaspis australiensis* Petrescu, 2006

*Campylaspis australiensis* Petrescu, 2006: 133–134, figs 5, 6.

**Material examined:** 1♂, P.88198.

**Distribution.** Australia: TAS—off Freycinet Peninsula, and off Flinders Island, at 350–720 m depth.

### *Campylaspis berentsae* sp. nov.

Fig. 5

**Holotype** subadult ♀, 5.04 mm, P.65546, Australia, WA, North West Shelf, -19.983° 117.856°, 42 m, epibenthic sled, 18 Feb 1983, CSIRO North-West Shelf project, FRV *Soela*, 01-B1-S | S01-83-B1, in AM. **Paratypes:** 1 subadult ♂, P.63964; 1♀, P.63966; 1♀, P.63967; 1♀, (dissected) MGAB CUM 1649.

**Etymology.** The species is dedicated to Dr Penny Berents, former Collection Manager of Marine Invertebrate collections at the Australian Museum, as a sign of high gratitude and respect for all her generous help she offered to me during my stay in Sydney in 2003.

**Diagnosis.** Carapace lateral sulcus with 1 transverse ridge behind the basis of ocular lobe, its upper and inner margins with rows of tubercles; pereonite 5 with to pleonite 4 and 6 with doubled carina, unique on pleonite 5; maxilliped 2 carpus with 1 seta; uropodal peduncle 1.8 pleonite 6.

**Description.** Carapace 0.56 entire body length, 2 lateral ridges delimiting lateral sulcus, 1 transverse ridge on sulcus, behind posterior extremity of frontal lobe, its upper and inner margins with rows of tubercles, 1 pair of small tubercle on basis of frontal lobe; eyelobe with 3 lenses; unique carina on basis of frontal lobe; pseudorostrum 0.38 carapace length (Fig. 5 A,B). Double carina on pereonite 5 and pleonites 1–4, 6, 1 carina on pleonite 5. —Antenna 1 peduncle article 1 0.8 rest of article's length; article 2 1.1 article 3 length; main flagellum 0.9 article 3 length, with 3 articles; accessory flagellum with 1 article; aesthetascs 1.6 main flagellum length (Fig. 5 C). —Maxilliped 2 basis fused with ischium, with 1 long plumose seta; merus with 1 long plumose seta; carpus 1.25 merus length, with 1 tooth and 1 simple seta; propodus 2nd longest article, 1.3 carpus length with 1 tooth and 1 short simple seta longer than the 3 terminal teeth of dactylus (Fig. 5 D). —Maxilliped 3 basis 1.1 rest of article's length, with 5 plumose setae; merus, 3 carpus length, with serrate margins, 1 long plumose seta; carpus as long as propodus, strongly serrate margins, with 3 plumose setae; dactylus 0.5 propodus length, with long

terminal simple seta, with 1 plumose and 5 simple setae; with exopod (Fig. 5 E). —Pereopod 1 basis 0.48 pereopod length, with 4 plumose setae; basis to propodus with serrate margins; ischium with 1 plumose seta; merus 3.6 ischium length, with 4 simple and 3 plumose setae; carpus 0.8 merus length, with 2 simple and 5 plumose setae; propodus 0.5 carpus length, with 2 simple and 3 plumose setae; dactylus 0.5 propodus length, with 5 simple setae; with exopod (Fig. 5 F). —Pereopod 2 basis 0.37 pereopod length, with 3 plumose setae; merus 6.5 ischium length, with 2 plumose setae; carpus 2 merus length, with 1 simple and 6 plumose setae; dactylus 3 propodus length, with 9 simple setae; with exopod (Fig. 5 G). —Pereopods 3–5 with decreasing basis and increasing carpus; pereopods 3 and 4 basis to carpus with serrate margins; pereopod 3 with 7 plumose, 3 simple and 2 annulate setae; pereopod 4 with 6 plumose, 3 simple and 2 annulate setae; pereopod 5 with 4 simple and 2 annulate setae; dactylus with 1 terminal simple seta (Fig. 5 H–J). —Uropod peduncle 1.8 pleonite 6 length, 2.3 endopod length; peduncle and rami with serrate margins; exopod 0.8 endopod length, with 2 simple setae; endopod with 4 microserrate setae (Fig. 5 K).

**Remarks.** *Campylaspis berentsae* sp. nov. is similar to *C. tasmaniensis* Petrescu, 2006, with a tuberculate carapace and lateral depression. It differs in the shorter pseudorostrum, eye lobe with lenses, maxilliped 3 with shorter terminal setae, pereopod 1 with serrate margins of the articles, pereopod 2 with a shorter dactylus, and more robust uropods with shorter peduncles and rami. The new species also resembles *C. microsulcata* Gerken, 2012 from New Zealand with 1 similar sulcus, but has a transverse ridge on the anterior part.

**Distribution.** Australia: WA—North West Shelf; at 42–54 m depth.

### *Campylaspis chisamerai* sp. nov.

Fig. 6

**Holotype** adult ♂, 3.55 mm, P.64735, Australia, NSW, northeast of Long Reef, -33.68° 151.88°, 366 m, 5 Dec 1977, FRV *Kapala*, K77-23-03, in AM.

**Etymology.** The species is named in honour of my colleague, Dr Gabriel Chișameră, reknown specialist in birds and small mammals, as a sign of sincere friendship.

**Diagnosis.** Carapace, 0.48 entire body length, covered with numerous tubercles placed either side of mid-dorsal ridge; maxilliped 2 with 2 small tubercles on carpus, 1 tooth on distal margin of propodus, short dactylus; pereopod 2 with digitiform dactylus; uropodal peduncle 2.1 pleonite 6 length, equal rami.

**Description.** Carapace, 0.48 body length, 1.86 as long as high, 1.58 as long as wide; lateral sulcus without posterior limit, transverse ridge in anterior part; carapace covered with numerous tubercles placed on each side of the mid-dorsal ridge; small antennal notch; smooth ventral margin; very small eyelobe without lenses; pseudorostrum 0.2 carapace length (Fig. 6 A,B). —Pleonites each with a mid-dorsal ridge, lateral ridge on each side of pleonites 1–5, pair of small tubercles on each side of pleonites 5 (Fig. 6 B). —Antenna 1 peduncle article 1 1.25 rest of article's length; article 2 1.1 article 3 length; main flagellum 2.7 article 3 length; accessory flagellum with 1 article; aesthetascs 0.3 main

flagellum length. (Fig. 6 C). —*Maxilliped 1* basis with 2 simple setae on process; carpus with 2 simple setae; dactylus with 1 simple seta (Fig. 6 D). —*Maxilliped 2* basis with 1 simple and 1 pappose seta; merus 3 ischium length, with 1 plumose seta; carpus as long as merus, with 2 tubercles and 1 simple seta; propodus with 1 simple seta and 2 teeth; short dactylus fused with 3 terminal teeth, central tooth shorter (Fig. 6 E). —*Maxilliped 3* basis 0.9 rest of article's length, with 3 plumose setae plumose setae; ischium 2 simple setae; merus 2 ischium length, with 1 simple and 1 plumose seta; carpus 0.6 merus length, with 1 plumose and 3 simple setae; propodus 1.5 carpus length, with 1 plumose and 2 pappose setae; dactylus 0.5 propodus length, terminal seta 3 dactylus length; with exopod (Fig. 6 F). —*Pereopod 1* basis 0.75 rest of article's length, with 1 pappose and 2 simple setae; ischium with 1 pappose seta; merus 2.4 ischium length, with 4 simple, 1 pappose and 1 plumose seta; carpus 0.88 merus length, with 3 simple, 1 simple and 1 pappose seta; propodus 1.26 carpus length, with 2 simple and 3 pappose setae; dactylus 0.73 propodus length, with 6 simple and 1 plumose seta; with exopod (Fig. 6 G). —*Pereopod 2* basis 0.47 rest of article's length, with 1 simple and 2 pappose setae; merus 3.7 ischium length, with 1 simple and 1 pappose seta; carpus 1.8 merus length, with 1 simple, 1 plumose and 1 pappose seta; dactylus with short digitiform tip, 3 plumose and 5 simple setae; with exopod (Fig. 6 H). —*Pereopod 3* basis 1.32 rest of article's length; ischium and merus with 1 plumose seta; carpus and propodus with 1 annulate seta; dactylus fused with terminal robust seta; with exopod (Fig. 6 I). —*Pereopod 4* basis 0.8 rest of article's length, with 1 plumose seta; merus 2 ischium length, with 1 plumose seta; carpus 2 merus length, with 1 plumose and 1 annulate seta; propodus 0.8 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta; with exopod (Fig. 6 J). —*Pereopod 5* basis 0.55 rest of article's length; merus 2 ischium length, 1 plumose seta; carpus 2 merus length, propodus with 1 annulate seta; dactylus with 1 subterminal seta, fused with terminal robust seta (Fig. 6 K). —*Uropod* peduncle 2.1 pleonite 6 length, serrate margins, 1.9 endopod length; exopod as long as endopod, with serrate margins, 2 simple and 1 microserrate subterminal seta; endopod with 2 simple, 1 microserrate and 1 terminal microserrate robust seta 0.68 endopod length (Fig. 6 L).

**Remarks.** *Campylaspis chisamerai* sp. nov. resembles *C. tasmaniensis* Petrescu, 2006 in carapace ornamentation (fewer and larger tubercles), and similar sulcus (with transverse ridge on *C. chisamerai*). It differs in the carapace to last pleonite having a dorsal crest; a shorter merus of the 3rd maxilliped with its dactylus having a short terminal seta instead of very long one in *C. tasmaniensis*, and a shorter dactylus of the pereopod 2.

**Distribution.** Australia: NSW—north east of Long Reef, at 366 m depth.

### *Campylaspis cursaruae* sp. nov.

Fig. 7

**Holotype** subadult ♀, 1.93 mm, P.64756, Tasman Sea, Lord Howe Rise, -27.9832° 162.8592°, 1250 m, epibenthic sled, coarse sediment with pumice, 6 May 1989, J.K. Lowry & party, RV *Franklin*, FR0589-28, in AM. **Paratype** 1♀, P.88242, same data as holotype, in AM.

**Etymology.** The species is dedicated to my colleague, Ileana Cursaru, chief economist at the “Grigore Antipa” Museum, as a sign of sincere gratitude and friendship.

**Diagnosis.** Carapace 0.54 total body length; merus with 5 teeth; propodus with 4 teeth; pereopod 2 with a long digitiform tip; uropodal peduncle 3 pleonite 6 length, 2.1 endopod length; exopod 0.83 endopod length, endopod with 4 microserrate setae medially.

**Description.** Carapace 0.54 body length, 1.77 as long as high; short serration on anterior part of ventral margin; oblique, anterior margin; small antennal notch; pseudorostrum 0.27 carapace length; smooth integument (Fig. 7 A). —*Antenna 1* peduncle article 1 0.6 rest of article's length; article 2 0.3 article 3 length; main flagellum as long as peduncle article 3 length, accessory flagellum with 1 article; aesthetascs 3.2 main flagellum length (Fig. 7 B). —*Maxilliped 3* basis 0.63 rest of article's length, with 2 pappose setae; merus 3.2 ischium length, serrated, with 7 setae, 5 teeth and 1 pappose seta; merus to propodus with serrate margins; carpus 0.47 merus length, with 3 pappose setae; propodus 0.9 carpus length, with 3 pappose setae; dactylus 0.55 propodus length, with 3 simple setae; with exopod (Fig. 7 C). —*Pereopod 1* basis 0.9 rest of article's length, with 1 pappose and 2 plumose setae; ischium 0.1 basis length, with 1 pappose seta; merus 3.6 ischium length, with 2 simple and 5 pappose setae; carpus 0.7 merus length, with 5 pappose setae; propodus 1.05 carpus length, with 5 pappose setae; dactylus 0.4 propodus length, with 4 simple setae; with exopod (Fig. 7 D). —*Pereopod 2* basis 0.49 rest of article's length, with 1 pappose and 1 simple seta; merus 5.3 ischium length, with 1 pappose seta; carpus 2.9 merus length, with 1 pappose and 3 simple setae; dactylus 3.8 propodus length, with 9 simple setae and digitiform tip; with exopod (Fig. 7 E). —*Pereopod 3* basis 1.36 rest of article's length; merus 1.16 ischium length; merus with 1 simple seta; dactylus fused with terminal robust seta (Fig. 7 F). —*Pereopod 4* basis 1.1 rest of article's length; merus 2 ischium length, with 1 simple seta; carpus 2 merus length, with 2 simple setae; propodus 0.25 carpus length, with 1 simple seta; dactylus 0.8 propodus length, fused with terminal robust seta (Fig. 7 G). —*Pereopod 5* basis 0.58 rest of article's length; ischium with 1 seta; merus 2 ischium length, with 1 simple seta; carpus 2 merus length, with 1 annulate seta; propodus 0.25 carpus length, with 1 annulate seta; dactylus 0.5 propodus length, fused with terminal robust seta (Fig. 7 H). —*Uropod* peduncle 3 pleonite 6 length, strongly serrate medially, 2.1 endopod length; exopod 0.83 endopod length, with 3 simple setae medially and 1 terminal robust seta; endopod with 4 microserrate setae and 1 terminal microserrate robust seta (Fig. 7 I).

**Remarks.** The new species is closely related to *C. popai* sp. nov. in the smooth carapace, maxilliped 3 with serrate margins of merus to propodus, pereopod 2 dactylus with digitiform tip, pereopods 3–5 fuse with terminal seta. It differs with: longer carapace, antenna 1 peduncle with article 3 shorter, pereopod 1 with more robust articles, pereopod 2 with longer dactylus, uropod endopod with 4 microserrate setae vs. 7 in *C. popai*.

**Distribution.** Tasman Sea (between Australia and New Zealand), Lord Howe Rise, at 1250 m depth

***Campylaspis dumitrumurariui* sp. nov.**

Fig. 8

**Holotype** adult ♂, 4.74 mm, P.88260, Australia, NSW, northeast of Long Reef, -33.7° 151.9°, 466 m, 19 Dec 1985, FRV *Kapala*, K85-21-06, in AM.

**Etymology.** The species is dedicated to Dr Dumitru Murariu, corresponding member of Romanian Academy, former General Director of the “Grigore Antipa” National Museum of natural History, world specialist in Mammals (bats), as a sign of highly gratitude and appreciation.

**Diagnosis.** Carapace with long lateral sulcus; eyeless ocular lobe; pereopod 2 dactylus 2.5 propodus length, with 1 long simple terminal seta; uropod peduncle 3 pleonite 6 length, 1.9 endopod length.

**Description.** Carapace 0.41 of entire body length, depressed carapace, 2.14 as long as high, 1.6 as long as wide, long lateral sulcus, 0.83 carapace length, short transverse ridge on its anterior part; pseudorostrum 0.23 entire carapace, small ocular lobe without visual elements, anterior margin little excavated (Fig. 8 A, B). —Antenna 1 basal article as long as the rest of articles combined, aesthetascs 2 main flagellum length, accessory flagellum with 1 article (Fig. 8 C). —Maxilliped 3 basis 1.45 rest of article’s length, 1 plumose seta on medial margin, 2 long pappose setae on lateral margin; ischium and merus with a tooth on medial margin, 1 pappose seta on lateral margin; carpus 0.88 merus length, with 4 pappose setae; propodus 0.8 carpus length, 3 pappose setae on medial margin, 1 seta on lateral margin; dactylus 0.5 propodus length, 1 long terminal simple robust seta; with exopod (Fig. 8 D). —Pereopod 1 basis 1.23 rest of article’s length, 2 plumose setae on medial, 1 seta on lateral margin; merus 3.6 ischium length, with 5 simple on medial margin and 1 plumose seta on lateral margin; carpus 0.9 merus length, 5 simple on medial and 2 plumose setae on lateral margin; propodus 0.75 carpus length, 2 simple on medial margin and 3 plumose setae on distal margin; dactylus 0.66 propodus length, 3 simple terminal short setae; with exopod (Fig. 8 E). —Pereopod 2 basis 0.9 rest of article’s length; merus 2.1 ischium length; carpus 1.9 merus length, with 7 simple setae; dactylus 2.5 propodus length, with 11 simple setae; with exopod (Fig. 8 F). —Pereopod 3 basis 2 rest of article’s length, with 1 simple seta; ischium with 1 simple seta; merus 1.4 ischium length, with 1 simple seta; carpus 1.8 merus length, with 1 simple and 1 annulate seta; propodus 0.4 carpus length, with 1 annulate seta; dactylus fused with 1 terminal long robust seta; with exopod (Fig. 8 G). —Pereopod 4 basis 1.17 rest of article’s length; ischium 0.1 basis length, with 1 simple seta; merus 1.6 ischium length, with 1 simple seta; carpus 2.8 merus length, with 2 simple setae; propodus 0.3 carpus length; dactylus fused with terminal simple seta; with exopod (Fig. 8 H). —Pereopod 5 basis 0.47 rest of articles combined, with 2 simple setae; ischium with 1 plumose seta; merus 1.5 ischium length, with 1 plumose and 1 simple seta; carpus 2.3 merus length, with 1 simple and 1 annulate seta; propodus 0.28 carpus length, with 1 annulate seta; dactylus fused with long terminal simple seta (Fig. 8 I). —Uropod peduncle serrate, 3 pleonite 6 length, 1.9 endopod length, with 5 plumose and 3 simple setae; exopod 0.88 endopod length, with 4 simple setae; endopod with 2 simple and 8 microserrate setae (Fig. 8 J).

**Remarks.** *Campylaspis dumitrumurariui* sp. nov. resembles *C. edenensis* Petrescu, 2006 and *C. gherasimi* sp. nov. by having a lateral sulcus with a transverse ridge on the anterior part. It differs from *C. edenensis* in: little shorter sulcus, shorter merus of maxilliped 3, pereopod 2 dactylus without a digitiform tip and a longer uropod with more setae on its endopod. *Campylaspis dumitrumurariui* differs from *C. gherasimi* in: smaller carapace, maxilliped 3 merus and carpus shorter and slender, pereopod 1 with longer basis and shorter rest of articles, dactylus of pereopod 2 with simple lateral setae versus plumose ones, longer uropod with more setae on endopod, 9 vs. 6.

**Distribution.** Australia: NSW—north east of Long Reef, at 466 m depth.

***Campylaspis echinata* Hale, 1945**

*Campylaspis echinata* Hale, 1945: 204, figs 41, 42.—  
Stoddart & Lowry, 2003: 412.

**Material examined:** 2♀♀, P.64656; 1 subadult ♂, P.88618.

**Distribution.** Australia: NSW—east of Port Jackson, east of Newcastle, Eden, at 70–2698 m; TAS, at 600 m depth (Hale, 1945; Petrescu, 2006, 2018).

***Campylaspis edenensis* Petrescu, 2006**

*Campylaspis edenensis* Petrescu, 2006: 135, figs 7–9.

**Material examined:** 1♀, P.63959; 2♀♀, P.64589; 1♀, P.64727; 1♂, P.88243.

**Distribution.** Australia: NSW—off Eden, at 520 m (Petrescu, 2016); and now NT, at 8–10 m; and WA, at 8–52 m depth (Petrescu, 2018).

***Campylaspis elenaiionuti* sp. nov.**

Figs 9, 10

**Holotype** subadult ♀, 4.21 mm, P.88262, Tasman Sea, Lord Howe Rise, -27.9832° 162.8592°, 1250 m, epibenthic sled, coarse sediment with pumice, 6 May 1989, J.K. Lowry & party, RV *Franklin*, FR0589-28, in AM. **Paratypes:** allotype ♂, P.88261; 1♀, P.88263, both same data as holotype.

**Etymology.** The species is dedicated to my younger colleagues, Drs Ionuț and Elena Iorgu, renown orthopteran specialists.

**Diagnosis.** Carapace, depressed in lateral view, elongated; integument of carapace, pereon and pleon densely covered with small acute tubercles and pits; maxilliped 2 carpus with a big tooth medially dactylus with 3 dactylar teeth.

**Description of female.** Carapace depressed in lateral view, 2.42 as long as high, 1.74 as long as wide; very small antennal notch; pseudorostrum, 0.32 carapace length, part of siphon exceeding carapace as long as pseudorostrum; pseudorostrum 0.3 carapace length; carapace integument, pereon and pleon densely covered with small acute tubercles and small pits (Fig. 9 A, B, C). —Antenna 1 peduncle with serrate margins, article 1 0.83 rest of article’s length, with 2 sensory setae, article 2 0.68 article 1, with 3 simple setae, article 3 with 1 small tooth; main flagellum 0.8 peduncle article 3, accessory flagellum with 1 article; aesthetascs as long as main flagellum (Fig. 9 D). —Maxilliped 1 basis

with 3 pappose, 2 hook setae and 1 simple seta; carpus with 2 pappose and 6 simple setae; dactylus 0.2 carpus length, with hyaline fringe (Fig. 9 E). —*Maxilliped* 2 basis with 1 plumose long seta; merus 2 ischium length, short plumose seta; carpus 1.2 merus length, with 1 plumose and 1 strong tooth; propodus 0.75 carpus length, with 1 simple robust seta; dactylus with 3 dactylar teeth (Fig. 9 F). —*Maxilliped* 3 basis 0.64 rest of article's length, with 5 pappose setae; ischium with 1 pappose seta; merus 5.33 ischium length, with 1 simple and 3 pappose setae, 2 teeth laterally; carpus 0.56 merus length, with 1 simple, 1 long plumose seta and 3 pappose setae, 3 strong teeth; propodus as long as carpus, with 2 pappose setae, 1 plumose seta and 3 teeth; dactylus 0.8 propodus length, terminal seta 1.41 dactylus length; with exopod (Fig. 9 G). —*Pereopod* 1 basis 0.7 rest of article's length, 2 pappose and 2 simple short setae; ischium to propodus with serrate margins, 1 pappose seta; merus 2.35 ischium length, with 4 pappose and 2 simple setae; carpus 1.23 merus length, with 1 simple and 4 pappose setae; propodus 0.68 carpus length, with 1 simple seta and 6 pappose setae; dactylus 0.54 propodus length, with 4 simple and 2 pappose setae; with exopod (Fig. 9 H). —*Pereopod* 2 basis 0.6 rest of article's length, with 1 simple and 2 pappose setae; ischium with 1 tooth; merus 2.4 ischium length, with 2 pappose setae; carpus 2.2 merus length, with 4 pappose setae; dactylus 2.77 propodus length, with 3 plumose, 3 pappose, 4 simple setae on lateral margin and 1 terminal plumose seta 0.8 dactylus length; with exopod (Fig. 9 I). —*Pereopods* 3–5 with decreasing basis and increasing carpus; dactylus fused with terminal robust long seta (Fig. 9 J–L). —*Uropod* peduncle 2.71 pleonite 6 length, 2.05 endopod length, serrate margins and medially; exopod 0.8 endopod length, with 1 simple and 2 microserrate setae; endopod with 3 simple and 2 microserrate setae (Fig. 9 M).

**Description of male.** Body length 3.95 mm. —**Carapace** 0.45 body length, elongated, 2 as long as high, 2 posterior crests; pseudorostrum 0.34 carapace length, with serrate anterior margin; 0.5 of ventral margin serrate; eyeless ocular lobe (Fig. 10 A). —**Pereonites** 3–5 with mid-dorsal spines. —**Pleonites** 1–5 with mid-dorsal spines. —**Antenna** 1 basal article of peduncle 0.68 rest of article's length, serrate medial margin of basal article and both margins of other 2 articles; main flagellum 1.29 apical article of peduncle length, short aesthetascs (Fig. 10 B). —*Maxilliped* 3 basis 0.53 rest of article's length, 3 pappose setae on medial margin, other 2 on lateral margin; 2 pappose setae on serrate margin of ischium; merus 2.5 ischium length, 1 simple seta on medial margin, 1 pappose seta on lateral; carpus 0.68 merus length, 4 simple and 3 pappose setae; propodus 0.76 carpus length, with 2 teeth and 3 pappose setae; dactylus 0.85 propodus length, 2 setae longer than dactylus; with exopod (Fig. 10 C). —*Pereopod* 1 basis 0.56 rest of article's length, 2 pappose and 2 setae; merus 2.5 ischium length, with 2 pappose and 3 simple setae; carpus as long as merus, 1 simple and 4 pappose setae; propodus 0.6 carpus length, with 7 pappose setae; dactylus with 3 pappose and 3 simple setae; with exopod (Fig. 10 D). —*Pereopod* 2 basis 0.85 rest of article's length, 2 long pappose setae on lateral margin; ischium with 1 pappose seta; merus 6.5 ischium length, with 1 pappose seta; carpus 2.3 merus length, with 3 pappose and 1 simple seta; propodus 0.33 carpus length, with 1 simple seta; dactylus broken; with exopod (Fig. 10 E). —*Pereopods* 3–5 with decreasing basis

decreasing and increasing carpus; pereopod carpus with serrate margins, pereopod 5 only medially; propodus with annulate seta; dactylus fused with terminal seta; pereopods 3 and 4 with exopods (Fig. 10 F–H). —*Uropod* peduncle 3 pleonite 6 length, with serrate margins, 1.58 endopod length; exopod 0.81 endopod length, both rami with serrate margins, with 4 simple and 1 microserrate terminal seta; endopod with 1 simple, 2 short robust simple and 1 terminal microserrate seta (Fig. 10 I).

**Remarks.** *Campylaspis elenaionuti* sp. nov. is similar to *C. wardi* Băcescu, 1991, *C. oanalexandru* sp. nov., *C. mioarae* sp. nov., *C. pauca* sp. nov. and *C. grossui* Petrescu, 2006 in having 1 strong tooth medially on the margin of the carpus (much stronger in *C. elenaionuti*). *Campylaspis elenaionuti* also has a similar slender maxilliped 3 merus as in *C. aureliani* sp. nov., *C. chisamerai* sp. nov., *C. echinata* Hale, *C. grossui* Petrescu, *C. guerragarciai* sp. nov., *C. johnstoni* Hale, 1937, *C. longidentata* Petrescu, *C. lynseyae* Petrescu, *C. nowrae* Petrescu, *C. oanalexandru* sp. nov., *C. pauca* sp. nov., *C. pustulosa* Hale, 1945, *C. serrata* Petrescu, *C. stanae* sp. nov., *C. tasmaniensis* Petrescu, *C. trisulcata* Petrescu, 2006, *C. udrescui* sp. nov. and *C. wardi* Băcescu. It differs mainly in the longer carapace with longer pseudorostrum, pereopod 2 dactylus with 3 terminal plumose setae equal in length, uropod endopod 1 seta in female and 2 in male.

**Distribution.** Tasman Sea—Lord Howe Rise, at 1250 m depth.

### *Campylaspis gabrielamircea* sp. nov.

Fig. 11

**Holotype** subadult ♀, 3.02 mm, P.88229, Australia, NSW, east of Newcastle, -32.88° 152.58°, 165 m, bottom tow with plankton net, 15 Aug 1985, FRV *Kapala*, K85-12-23, in AM.

**Paratypes:** 1♀, P.64654; 1♀, 1♂, 2.7 mm, P.64737; 1♂, MGAB CUM 1650; 2 mancas, P.88230; 1♀, 1♂, 1 manca, P.64744; 1♀ (diss.) MGAB CUM 1651; 1♂, P.64747.

**Etymology.** Species dedicated to my colleagues from the “Grigore Antipa” Museum, Gabriela and Mircea Andrei, as a sign of gratitude for their friendship showed to me during the years and especially during the difficult period of 2005.

**Diagnosis.** Carapace 0.5 body length, 3 pairs of small tubercles on each side, a pair of larger tubercles on basis of frontal lobe, frontal lobe with 2 tiny tubercles, lateral longitudinal ridge parallel with ventral margin; maxilliped 2 carpus with 1 small tooth and 2 simple setae; propodal seta longer than teeth of dactylus; pereopod 2 dactylus 2.4 propodus length, with digitiform tip; uropodal peduncle 2 6 pleonite length, 1.6 endopod length, exopod 0.7 endopod length.

**Description.** Carapace about 0.5 body length, 1.8 as long as high, 1.5 as long as wide, dorsal keel, 3 dorsal pairs of small tubercles on each side, 1 pair of larger tubercles at basis of frontal lobe; eye lobe with 3 tiny tubercles, 1 posterior and 1 lateral large protuberances, lateral longitudinal ridge, parallel with ventral margin; pseudorostrum 0.26 carapace length; ventral margin serrated in anterior part (Fig. 11 A, B, C). Pereonite 5 to pleonite 4 with medial double keel, unique on last 2 pleonites. —*Maxilliped* 2 basis and ischium fused, longer than 0.5 of maxilliped, 1 plumose seta on medial

corner; merus with 1 plumose seta, carpus with 1 small tooth between 2 simple setae; propodus 2nd longest article, with 1 outer robust seta exceeding 3 teeth of dactylus (Fig. 11 D). —*Maxilliped 3* scaly integument, with serrate margins, basis shorter than rest of articles combined length, 3 plumose setae; merus with 1 plumose and 5 simple setae, longest article, 1.1 carpus length; carpus as long as propodus, 4 plumose and 3 simple setae on carpus and propodus; 4 terminal simple setae longer than dactylus; with exopod (Fig. 11 E). —*Pereopod 1* with scaly integument, basis 0.4 pereopod length, with 2 plumose setae; ischium to propodus with serrate margins; ischium with 6 simple setae; carpus with 4 simple setae; propodus with 3 setae; dactylus with 6 simple setae; with exopod (Fig. 11 F). —*Pereopod 2* basis with a few scales, longer than 0.3 pereopod length, 1 plumose seta; merus 3 ischium length, with 1 simple seta; carpus 2 merus length; merus and carpus with serrate margins, 2 simple and 1 robust seta; dactylus 2.4 propodus length, with 7 simple setae on both margins, digitiform tip, 1 long terminal simple seta; with exopod (Fig. 11 G). —*Pereopods 3–5* with decreasing basis and increasing carpus length; dactylus fused with terminal seta (Fig. 11 H–J). —*Uropod* with serrate margins, peduncle 2 pleonite 6 length, 1.6 endopod length, exopod 0.7 endopod length, terminal robust seta, 0.6 exopod length; endopod with 3 microserrate setae on medial margin, 1 microserrate terminal seta, 0.4 endopod length (Fig. 11 K).

**Remarks.** *Campylaspis gabrielamircea* sp. nov. is closely related to *C. angelae* Petrescu, 2006 from New South Wales, primarily on the basis of carapace sculpture; it differs by pereopod 1 having a shorter basis in *C. gabrielamircea* vs. longer in *C. angelae*, and the uropod with a longer peduncle in the new species (2 vs. 1.6), without a median crest.

**Distribution.** Australia: NSW—east of Newcastle and of Long Reef Point, at 165–176 m; and TAS—east of Flinders Island, at 280–350 m depth.

### *Campylaspis georgetae* sp. nov.

Fig. 12

**Holotype** subadult ♀, 2.54 mm, P.88251, Australia, WA, Mangrove Bay, -21.97° 113.93°, 9 Aug 1990, L. Watling, Mangrove Bay 4 | MGB-4, in AM.

**Etymology.** The species is dedicated in the memory of Georgeta Staicu.

**Diagnosis.** Carapace almost 0.5 of body length; 2 lateral sulci; maxilliped 3 merus longer than carpus and propodus combined length; pereopod 2 dactylus with digitiform tip; uropodal peduncle 1.65 endopod length, equal rami.

**Description.** Carapace 0.53 entire body length, 2 lateral sulci not continuous around posterior end, dorsal medial carina, 1.93 longer than high, 1.27 longer than large; antennal notch obsolete; eyelobe with 5 lenses; pseudorostrum 0.25 carapace length; smooth anterior and ventral margins, 2

longer than high (Fig. 12 A, B). —*Antenna 1* basal article of peduncle 0.6 length of remaining articles combined, main flagellum 1.4 last peduncle article length, aesthetascs longer than main flagellum and last peduncle article; minute accessory flagellum (Fig. 12 C). —*Maxilliped 3* basis 0.54 length rest of article's length, with 3 plumose setae; merus 3.7 ischium length, with 1 pappose and 6 simple setae; merus and carpus with serrate medially; carpus 0.4 merus length, with 2 pappose and 2 simple setae; propodus 1.1 carpus length, with 3 pappose setae; dactylus 0.7 propodus length, with 3 terminal robust setae; with exopod (Fig. 12 D). —*Pereopod 1* basis 0.67 rest of article's length, with 1 pappose seta; merus 4.5 times ischium length, with 3 pappose and 1 simple seta; carpus as long as propodus, with 3 pappose and 1 simple seta; propodus with 4 pappose setae; dactylus 0.73 propodus length, with 1 pappose and 4 simple setae; with exopod (Fig. 12 E). —*Pereopod 2* (Fig. 12 F), basis as long as ischium to carpus length, 1 simple and 1 pappose seta; ischium with 1 pappose seta; merus 3 ischium length, with 1 pappose and 1 simple seta; carpus 1.26 merus length, with 1 pappose and 5 simple setae; propodus 0.52 carpus length, with 1 medial simple seta; dactylus 2.7 propodus length, with 3 simple and 1 microserrate seta, with digitiform tip; with exopod. —*Pereopod 3* (Fig. 12 G), basis 0.75 rest of articles combined length; merus 1.7 ischium length, with 1 simple seta; carpus 1.4 merus length, with 1 annulate seta; propodus 0.4 carpus length, with 1 simple and 1 annulate seta; dactylus 0.5 propodus length, fused with terminal robust seta. —*Pereopod 4* basis 0.73 rest of articles combined length, with 2 simple setae; ischium as long as merus, with 1 simple seta; merus with 2 simple setae; carpus shorter than ischium and merus combined length, 1 simple short and 1 annulate seta; propodus 2 dactylus length, with 1 annulate seta; dactylus fused with robust terminal seta (Fig. 12 H). —*Pereopod 5* basis 0.61 rest of articles combined length, as long as merus and carpus combined; 1 annulate seta on propodus, similar dactylus to previous 2 pairs (Fig. 12 I). —*Uropod* peduncle 1.88 6 pleonite length, 1.5 its rami, serrate margins; exopod as long as endopod, with 3 simple and 1 long robust seta, 0.8 exopod length; endopod with serrate margins, 2 simple medially and 1 long robust terminal seta, 0.56 endopod length (Fig. 12 J).

**Remarks.** *Campylaspis georgetae* sp. nov. is closely related to *C. sinuosa* Gamô, 1960. It differs in: carapace without dorsal pellicid spots; maxilliped 3 without medial angle, basis with a longer outer plumose seta, smooth medial margin of propodus, pappose setae vs. simple ones; pereopod 1 basis with 1 instead of 2 setae on medial margin, slender merus, 1 pappose seta on medial margin of merus vs. 6, 1 pappose seta on dactylus instead of a simple seta; pereopod 2 longer than in Gamô's species, with pappose setae vs. simple ones, fewer seta on dactylus, digitiform tip vs. normal one; pereopod 3 with longer ischium to dactylus articles, stronger terminal seta in pereopods 3–5; shorter uropodal peduncle (ratio peduncle/last pleonite, 1.88 vs. 2).

**Distribution.** Australia: WA—Mangrove Bay.

### *Campylaspis gherasimi* sp. nov.

Fig. 13

**Holotype** subadult ♂, 6.14 mm, P.64834, Australia, NSW, east of Long Reef, -33.72° 151.77°, 174 m, epibenthic sled, 20 Dec 1985, J.K. Lowry, R.T. Springthorpe, FRV *Kapala*, K85-21-08, in AM. **Paratype:** 1♂, P.88246.

**Etymology.** The species is dedicated in honour of Paul Gherasim, famous Romanian painter, as a sign of love and highly respect for all he has done for me and my family.

**Diagnosis.** Carapace, 0.44 body length, almost rectangular in dorsal view; maxilliped 3 basis, 0.83 rest of article's length; pereopod 2 dactylus 2.6 propodus length; uropodal peduncle 2.4 pleonite 6, 1.85 endopod length; exopod 0.8 endopod length.

**Description.** *Carapace*, 0.44 body length, 2 as long as high, 1.38 as long as wide, almost rectangular in dorsal view, anterior margin rectangular, with median elevation, rounded anteroventral corner; large lateral sulcus opening posteriorly, transverse ridge on anterior part; pair of large crests on posterior end; eyelobe very small, without lenses; pseudorostrum 0.21 carapace length; carapace covering first 2 pereonites (Fig. 13 A, B). —*Pleonites* 1–4 each with pair of dorsal tubercles and pair of lateral crests, pleonite 5 with mid-dorsal ridge, 2 pairs of oblique ridges towards dorsal ridge, 1 pair of lateral crests, pleonite 6 without ornamentation. —*Antenna* 1 peduncle article 1 0.74 rest of article's length; main flagellum 1.2 peduncle articles 1 and 2 length, accessory flagellum with 1 article; aesthetascs 0.7 main flagellum length (Fig. 13 C). —*Maxilliped* 3, basis, 0.83 rest of article's length, with 3 plumose setae; ischium 0.08 basis length, with 1 tooth; merus 6.4 ischium length, serrate margins, with 2 plumose setae; carpus, 0.65 merus length, with serrate margins, with 2 pappose setae, 1 plumose seta; propodus 0.37 carpus length, with 5 pappose setae; dactylus 0.5 propodus length, with 3 simple setae; with exopod (Fig. 13 D). —*Pereopod* 1 basis 0.9 rest of article's length; merus 6.6 ischium length; carpus 1.25 merus length, with 6 simple setae; propodus 0.6 carpus length, 5 simple setae; dactylus 0.6 propodus length, with 3 simple setae; with exopod (Fig. 13 E). —*Pereopod* 2, basis 0.6 rest of article's length; ischium to dactylus much slender than basis; merus 5.5 ischium length, with 1 simple seta; carpus 1.5 merus length, with 5 simple setae; dactylus 2.6 propodus length, with 10 microserrate setae; with exopod (Fig. 13 F). —*Pereopod* 3, basis 1.4 rest of article's length, with 1 simple seta; ischium with 1 simple seta; merus 1.6 ischium length, with 1 simple seta; carpus 2.25 merus length, with 2 simple setae; propodus 0.44 carpus length, with 1 annulate seta; dactylus 0.5 propodus length, fused with terminal robust seta; with exopod (Fig. 13 G). —*Pereopod* 4, basis 1.04 rest of article's length; ischium with 1 simple seta; merus 2.2 ischium length, with 1 simple seta; carpus 2.18 merus length, with 2 simple setae; propodus 0.6 carpus length; dactylus 0.5 propodus length, fused with terminal robust seta; with exopod (Fig. 13 H). —*Pereopod* 5, basis 0.6 rest of article's length; ischium 0.18 basis length, with 1 simple seta; merus 3 ischium length, with 1 simple seta; carpus 1.13 merus length, with 1 simple seta; propodus 0.4 carpus length, with 1 annulate seta; dactylus 0.5 propodus length, fused with terminal robust seta (Fig. 13 I). —*Uropod*

peduncle 2.4 pleonite 6 length, 1.85 endopod length, serrate medially; exopod 0.8 endopod length, 1 subterminal simple and 1 terminal microserrate simple seta, 0.57 exopod length; endopod with 8 microserrate setae, 1 robust terminal microserrate seta, 0.57 endopod length (Fig. 13 J).

**Remarks.** The carapace of *C. gherasimi* sp. nov. is more rectangular in dorsal view than *C. rectangulata* Petrescu, 2006, but has a transverse ridge anteriorly as in *C. dumitrumurariui* sp. nov. and *C. edenensis* Petrescu (2006). The new species has a massive merus and carpus of maxilliped 3 as in *C. mioarae* sp. nov., but without a process on the medial margin of the basis; pereopod 2 dactylus without a digitiform tip like in *C. dumitrumurariui*, *C. mioarae*, not like in *C. rectangulata*; the new species has an uropodal endopod with 8 medial setae, not like in other Australian species with 9 or 10 setae.

**Distribution.** Australia: NSW—east of Long Reef, at 174 m depth.

### *Campylaspis guerragarciae* sp. nov.

Fig. 14

**Holotype** subadult ♀, 4.47 mm, P.88256, Australia, NSW, east of Broken Bay, -33.67° 152.1°, 1108–1115 m, trawl, 19 Dec 1985, FRV *Kapala*, K85-21-05, in AM. **Paratype:** 1♀, P.88257 (dissected), collected with holotype.

**Etymology.** The species is dedicated to Dr Manuel Guerra Garcia (University of Seville), specialist on world caprellids, for facilitating my contact with the Australian Museum and their collection.

**Diagnosis.** Carapace about 0.5 body length, lateral sulcus marked by tubercles, covered with spines interspersed with pits; pereonites each with pair of dorsal tubercles, pleonites 1–5 with median tubercles; pleonites 1–4 with pair of dorsal tubercles, pleonite 5 with 3 tubercles; pleonite with 2 tubercles; maxilliped 2 propodal seta little longer than dactylar teeth; pereopod 2 without digitiform tip; uropod peduncle 2.25 pleonite 6, 2 longitudinal serrate crests, 1.9 endopod length.

**Description.** *Carapace* about 0.5 body length; lateral sulcus marked by larger tubercles, a much stronger tubercle on prominence at basis of frontal lobe; ocular lobe without visual elements; marked antennal notch; anterolateral margin with few serrations, covered densely with spines interspersed with pits; pseudorostrum 0.3 carapace length (Fig. 14 A, B, C). —*Pereonites* each with 1 pair of dorsal tubercles. —*Pleonites* 1–4 with paired dorsal tubercles, pleonite 5 with 3 median tubercles, pleonite 6 with 2 pairs of dorsal tubercles. —*Antenna* 1 with basal article of peduncle longer than rest of articles combined, with serrate margins, main flagellum with 3 articles, accessory flagellum, minute, 1-articled (Fig. 14 D). —*Maxilliped* 2 basis fused with ischium, with a strong plumose medial seta, merus with 1 medial seta, large carpus with 2 setae on medial margin, propodus, 2nd longest article, with short robust outer seta, little longer than dactylus with 3 teeth (Fig. 14 E). —*Maxilliped* 3 basis little longer than rest of articles combined, 4 plumose setae; merus, 2nd longest article, with strong tooth and 4 plumose setae; carpus about 0.5 merus length, with 2 strong teeth and 1 plumose seta; propodus 1.5 carpus length, with 3 pappose

and 1 plumose seta; dactylus 2 shorter than propodus, with 3 simple setae; with exopod (Fig. 14 F).—*Pereopod 1* basis 0.8 entire pereopod length, 2 plumose setae; ischium with a plumose seta; merus 3 ischium length, 3 plumose setae, 1.2 carpus length; carpus as long as propodus, with 3 plumose and 2 simple setae; propodus 1.1 dactylus length, with 3 plumose and 2 simple setae; dactylus with 6 simple setae; with exopod (Fig. 14 G).—*Pereopod 2* basis 0.55 pereopod length, serrate margins; ischium with 1 plumose seta; merus 4.7 ischium length, with 2 plumose setae; carpus 1.6 merus length, with 2 robust simple and 1 plumose seta; dactylus 2.7 propodus length, with 3 simple and 4 plumose setae; with exopod (Fig. 14 H).—*Pereopods 3–5* decreasing basis and increasing carpus; carpus and propodus with 1 annulate seta; dactylus with 1 terminal simple seta (Fig. 14 J–K).—*Uropod* peduncle 2.25 pleonite 6 length, densely serrated, 2 longitudinal serrate crests, 1.9 endopod length; rami with serrate margins; endopod little longer than exopod; exopod with 1 terminal long simple; endopod with 3 medial setae and a terminal simple seta (Fig. 14 L).

**Remarks.** The new species is closely related to *C. australiensis* Petrescu, 2006 but differs in: carapace with dense little spines in the new species vs. strong tubercles in *C. australiensis*, pleonite 5 with 3 dorsal tubercles vs. 2 pairs, pereopod 2 with 1 short dactylus vs. long in *C. australiensis*; uropod with longer peduncle and 2 longitudinal serrate crests vs. 1.

**Distribution.** Australia: NSW—east of Broken Bay, at 1108–1115 m depth.

### *Campylaspis hangiuae* sp. nov.

Fig. 15

**Holotype** subadult ♀, 3.33 mm, P.88264, Australia, NSW, east of Long Reef, -33.72° 151.77°, 174 m, epibenthic sled, 20 Dec 1985, J.K. Lowry, R.T. Springthorpe, FRV *Kapala*, K85-21-08, in AM.

**Etymology.** The species is named in honour of Anca Hangiu, pharmacist, as a sign of gratitude for her generous help regarding my health condition.

**Diagnosis.** Carapace, 0.5 body length, large lateral depression with a transverse ridge in anterior part, long lateral groove under the depression; pereopod 1 with robust articles; pereopod 2 dactylus with digitiform tip; uropod peduncle 2 pleonite 6 length, 2.4 endopod length, exopod 0.82 endopod.

**Description.** Carapace 0.5 body length, about 2 as long as high, 1.25 as long as wide; small antennal notch; oblique anterior margin; smooth ventral margin; dorsal margin with 2 large elevated areas delimiting a dorsal plateau and a large lateral sulcus with a transverse ridge in anterior part; long lateral groove under the depression; small eyelobe without lenses; pseudorostrum 0.3 carapace length (Fig. 15 A, B).—*Antenna 1* peduncle with robust articles, article 1 0.8 rest of article's length; main flagellum 1.28 article 3 length; accessory flagellum with 1 article; aesthetascs as long as main flagellum (Fig. 15 C).—*Maxilliped 3* basis 0.55 rest of article's length, with 2 plumose setae; ischium 0.22 basis length; merus 4.8 ischium length, serrate medially, with 3 teeth and 1 plumose seta; carpus 0.2 merus length, with 2

simple and 1 plumose seta; propodus 1.2 carpus length, with 3 pappose setae; dactylus 0.5 propodus length, with 4 simple setae; with exopod (Fig. 15 D).—*Pereopod 1* with robust articles, basis 0.75 rest of article's length, with 2 plumose setae; ischium 0.16 basis length, with 1 plumose seta; merus 2.6 ischium length, with 1 simple and 2 plumose setae; carpus 0.73 merus length, with 3 plumose setae; propodus 0.88 carpus length, with 5 plumose setae; dactylus 0.75 propodus length, with 5 simple setae; with exopod (Fig. 15 E).—*Pereopod 2*, robust articles, basis 0.5 pereopod length, serrate in posterior half and 1 plumose seta, serrate, with 2 plumose and 2 simple setae; ischium with 1 plumose seta; merus 2.5 ischium length, with 1 plumose seta; carpus 1.75 merus length, with 4 plumose setae; dactylus 3 propodus length, with 7 simple setae and digitiform tip; with exopod (Fig. 15 F).—*Pereopod 3*, basis 1.16 rest of article's length, 1 short simple seta; ischium 0.17 basis length, 1 short simple seta; merus 1.1 ischium length, 1 short simple seta; carpus 2 merus length, 2 short simple setae; propodus 0.25 carpus length, with 1 short seta; dactylus fused with short terminal seta (Fig. 15 G).—*Pereopod 4*, basis 0.77 rest of article's length, 1 simple seta; ischium 0.25 basis length, 1 short simple seta; merus 1.5 ischium length, with 1 short simple seta; carpus as long as merus, with 1 short simple seta; propodus 0.5 carpus length, 1 simple seta; dactylus fused with robust terminal seta (Fig. 15 H).—*Pereopod 5*, basis 0.36 rest of article's length; ischium 0.36 basis length, with 1 short simple seta; merus 1.8 ischium length; carpus 1.6 merus length, 1.06 basis length; propodus 0.33 carpus length; dactylus fused with robust terminal seta (Fig. 15 I).—*Uropod*, robust articles, peduncle 2 as long as pleonite 6, strongly toothed margins, 2.4 endopod length; exopod 0.82 endopod, serrated lateral margin, 1 seta on margin, terminal robust seta; endopod with 3 medial microserrate setae, terminal robust seta (Fig. 15 J).

**Remarks.** *Campylaspis hangiuae* sp. nov. has a large and long lateral sulcus reminiscent of *C. edenensis* Petrescu, 2006, *C. berentsae* sp. nov. and *C. vasilescui* sp. nov.; it has the pereopod 2 dactylus without a digitiform tip as in *C. berentsae* (with process in *C. edenensis* and *C. vasilescui*); it differs from *C. berentsae* in having the eyelobe without lenses and maxilliped 3 with a bulky carpus; uropod endopod with 5 setae vs. 3 in *C. vasilescui*.

**Distribution.** Australia: NSW—east of Long Reef, at 174 m depth.

### *Campylaspis heardi* sp. nov.

Figs 16, 17

**Holotype** subadult ♀, 8.75 mm, P.64736, Australia, NSW, east of Broken Bay, -33.62° 152.07°, 896–923 m, dredge, 10 Dec 1980, R.T. Springthorpe, FRV *Kapala*, K80-20-09, in AM. **Paratypes:** 1♂, P.88222; 1♀, P.88221; 1♀ (diss.) MGAB CUM 1653; 1♂ (diss.) MGAB CUM 1654, all same data as holotype; 1♂, P.88223.

**Etymology.** The species is dedicated to Dr Richard W. Heard Jr, specialist in Peracarida (Gulf Coast Research Laboratory, Department of Coastal Sciences, University of Southern Mississippi, U.S.A.), as a sign of gratitude for his generous help and friendship he offered to me in the right moment.

**Diagnosis.** Carapace 0.46 body length, densely spiny, with 1 pair of acute tubercles at basis of frontal lobe; pleonites with spines; maxilliped 2 propodal seta longer than dactylar teeth; pereopod 2 dactylus 3.2 propodus length, with terminal seta; uropod peduncle 2.9 pleonite 6, 2.7 endopod length, 2 longitudinal serrate crests; exopod 0.7 of endopod length; endopod with 3 simple setae in female and 8 simple setae in male.

**Description of female.** Carapace 0.5 body length, 1.9 as long as high, densely spiny integument with a pair of acute tubercles at basis of frontal lobe, notch present; small ocular lobe, eyeless; pseudorostral lobes meeting in front of ocular lobe, 0.3 carapace length (Fig. 16 A, B). —Pereonite 1 almost covered by carapace. Spiny pleonites. —Antenna 1 peduncle with serrate margins, article 1 0.6 rest of article's length; article 3 1.1 article 2 length; main flagellum 0.8 article 3 length, with 3 articles; accessory flagellum with 2 articles; aesthetascs 0.8 main flagellum length (Fig. 16 C). —Maxilliped 2 basis fused with ischium, longer than rest of article's length, with 2 plumose setae; propodus, 2nd longest article, with 1 protuberance medially with 1 seta simple longer than dactylar 3 teeth (Fig. 16 D). —Maxilliped 3 basis 0.9 rest of article's length, with 5 plumose setae; merus 6 ischium length, with 2 strong teeth and 1 plumose seta; carpus 1.45 merus length, with 8 robust interspersed with smaller teeth medially, serrate laterally, with 1 simple and 1 plumose seta; propodus 0.4 carpus length, with 2 robust teeth and 2 pappose setae; dactylus 0.5 propodus length, with 3 simple setae; with exopod (Fig. 16 E). —Pereopod 1 basis 0.9 rest of article's length, with 7 plumose setae; merus 1.6 ischium length, with 1 plumose seta; carpus 1.25 merus length, strongly serrate medially, with 1 simple and 8 plumose setae; propodus 0.3 carpus length, with 6 plumose setae; dactylus 0.8 propodus length, with 6 long simple setae; with exopod (Fig. 16 F). —Pereopod 2 basis 0.3 pereopod length, with 2 plumose setae; merus 7.5 ischium length, with 1 plumose and 2 simple setae; carpus 1.4 merus length, with 1 tooth and 4 plumose setae; dactylus 3.2 propodus length, with 7 plumose and 3 simple setae; with exopod (Fig. 16 G). —Pereopods 3 and 4 with decreasing basis and increasing carpus, pereopod 5 with shorter carpus; dactylus with 1 simple terminal seta (Fig. 16 H-J). —Uropod peduncle 2.3 pleonite 6 length, 2.6 endopod length, with serrate margins, median longitudinal serrate crest; exopod 0.8 endopod length, serrate margins, terminal stout simple seta; endopod with serrate margins, 2 medial setae and 1 terminal, longer, seta (Fig. 16 K).

**Description of male.** Body length 9.75 mm. —Carapace 2 longer than high; serrate anterolateral margin (Fig. 17 A). —Pereonites 3–5 with dorsal spines and pereonites 2–5 with dorsal setae. —Pleonites 1–3 with dorsal spines, each pleonite with dorsal setae. —Antenna 1 peduncle article 1 1.3 rest article's length; main flagellum with 4 articles accessory flagellum with 2 articles; aesthetascs 1.4 main flagellum length (Fig. 17 B, C). —Maxilliped 3 basis, 0.5 maxilliped length, with 6 simple short setae medially, 2 pappose and 2 plumose setae, serrate medially; ischium with 1 tooth and 2 plumose setae; merus 1.8 ischium length, with 2 large teeth and 2 plumose setae; carpus 1.6 merus length, with 4 spines medially; propodus 0.2 carpus length, with extremities longer than dactylus; with exopod (Fig. 17 D, E). —Pereopod 1 basis 1.1 rest of article's length, with 6 plumose setae;

basis to propodus with serrate margins; merus 2.8 ischium length, with 1 plumose seta; carpus 1.25 merus length, with 6 plumose setae; propodus 0.5 carpus length, with 1 simple and 6 plumose setae; dactylus 0.9 propodus length, with 5 simple setae; with exopod (Fig. 17 F). —Pereopod 2 basis longer 0.5 pereopod length, with 1 plumose seta, numerous simple short setae on both margins; merus 4 ischium length, with 2 simple and 1 plumose seta; carpus 1.6 merus length, with 1 simple and 3 plumose setae; dactylus 4.3 propodus length, with 7 simple and 3 plumose setae; with exopod (Fig. 17 G). —Pereopods 3–5 decreasing basis and increasing carpus, with simple and plumose setae; dactylus fused with terminal seta; pereopods 3, 4 with exopods (Fig. 17 H–J). —Uropod peduncle 2.9 pleonite 6 length, 2.7 endopod length, serrate margins, 2 median longitudinal serrate crests, 7 simple and 6 microserrate setae; exopod 0.7 endopod length, with serrate margins, with 2 simple setae; endopod with longitudinal serrate crest, with 7 simple and 1 terminal simple seta (Fig. 17 K).

**Remarks.** *Campylaspis heardi* sp. nov. has no lateral sulcus as in *C. longidentata* Petrescu, 2006 and *C. serrata* Petrescu, 2006. *Campylaspis heardi* sp. nov. differs from *C. longidentata* mainly by: carapace without pits, maxilliped 2 with much shorter teeth, dactylus without digitiform tip, uropod with exopod shorter than endopod. It differs from *C. serrata* by: tiny spines instead of club-like setae and pits, small ocular lobe, maxilliped 3 with larger articles with strong serration vs. short serration; uropod with shorter exopod than endopod, peduncle with longitudinal crest vs. peduncle without crest.

**Distribution.** Australia: NSW—east of Broken Bay, at 896–923 m depth.

### *Campylaspis johnstoni* Hale, 1937

*Campylaspis johnstoni* Hale, 1937: 37–56, fig. 2.

**Material examined:** 1♀, MGAB CUM 1646; 1♀, P.65042; 1♀, P.88247; 2♀♀, 3♂♂, P.88248.

**Distribution.** Antarctica (Kerguelen Islands), southwestern Atlantic (Argentina), at 204 m depth (Băcescu, 1992); Australia: NSW and TAS, at 720 m depth (Petrescu, 2006). The present records from NSW are at a greater depth: from 25–2698 m depth (Petrescu, 2018).

### *Campylaspis keablei* sp. nov.

Fig. 18

**Holotype** subadult ♂, 4.47 mm, P.88265, Australia, NSW, east of Broken Bay, -33.52° 152.13°, 914 m, 2.5 m sled dredge, 10 Dec 1980, R.T. Springthorpe, FRV *Kapala*, K80-20-08, in AM.

**Etymology.** The species is dedicated to Dr Stephen Keable, specialist in Isopoda and Collection Manager of Marine Invertebrates at the Australian Museum, as a sign of deep gratitude for help he kindly offered to me in study of this important collection of Cumacea in Sydney and in Bucharest.

**Diagnosis.** Carapace, 0.53 body length, long lateral sulcus; uropodal peduncle 2.05 pleonite 6 length, longitudinal crest, 2.33 endopod length; exopod 0.9 endopod length.

**Description.** *Carapace*, 0.53 entire body length, 1.63 as long as high, 1.5 as long as wide; sulcus almost as long as lateral side of carapace; small eyelobe without lenses; pseudorostrum 0.19 carapace length; anterior margin with short serration on anteroventral corner, rest of ventral margin, smooth (Fig. 18 A, B). —*Antenna 1* peduncle article 1 0.8 rest of article's length; main flagellum 1.37 article 3 length; accessory flagellum with 1 article; aesthetascs 2 main flagellum length (Fig. 18 C). —*Maxilliped 3*, basis 1.33 rest of article's length, 2 simple, 1 pappose and 2 plumose setae; merus 2.4 ischium length, with tooth medially, with 1 pappose and 2 simple setae; carpus 0.8 merus length, with 2 pappose setae; propodus 1.1 carpus length, with 4 pappose setae; dactylus 0.5 propodus length, with 3 simple setae; with exopod (Fig. 18 D). —*Pereopod 1*, basis 1.12 rest of article's length, 1 simple and 3 plumose setae; merus 2.8 ischium length, with 1 plumose and 5 simple setae; carpus 1.1 merus length, with 1 plumose, 2 pappose and 4 simple setae, serrate margins; propodus 0.8 carpus length, with 2 simple and 3 pappose setae; dactylus 0.6 propodus length, with 7 simple setae; with exopod (Fig. 18 E). —*Pereopod 2*, basis 0.4 rest of article's length, 1 simple seta; merus 4.5 ischium length, with 2 pappose setae; carpus 2 merus length, with 2 simple, 3 plumose setae and 3 teeth; dactylus 6.33 propodus length, with 4 simple and 5 plumose; with exopod (Fig. 18 F). —*Pereopod 3*, basis as long as rest of article's length, with 1 simple seta; merus 1.7 ischium length, with 1 plumose seta; carpus 1.6 merus length, 1 annulate seta; propodus 0.4 carpus length, with 1 annulate seta; dactylus 0.3 propodus length, fused with terminal seta; with exopod (Fig. 18 G). —*Pereopod 4* basis 1.3 rest of article's length, with 2 simple setae; ischium with 1 plumose seta; merus 1.4 ischium length, with 1 simple seta; carpus 1.8 merus length, 1 annulate seta; propodus 0.38 carpus length, 1 annulate seta; dactylus 0.6 propodus length, fused with terminal robust seta; with exopod (Fig. 18 H). —*Pereopod 5* basis 0.7 rest of article's length, with 1 simple seta; ischium with 1 simple seta; merus 1.5 ischium length, with 1 simple seta; carpus 2.3 merus length, with 1 simple seta; propodus 0.4 carpus length, 1 annulate seta; dactylus 0.3 propodus length, fused with terminal robust seta (Fig. 18 I). —*Uropod* peduncle 2.05 pleonite 6 length, serrate margins, 1 longitudinal crest, 2.3 endopod length; exopod 0.9 endopod length, serrate margins, longitudinal crest, tip of exopod, broken; endopod with 6 microserrate and 1 terminal robust seta, broken (Fig. 18 J).

**Remarks.** *Campylaspis keablei* sp. nov. has some characters common with some Indo-Pacific species, *C. akabensis* Bacescu & Muradian, 1975, *C. amblyoda* Gamô, 1960, *C. calmani* sp. nov., *C. edenensis* Petrescu, 2006, *C. hangiuae* sp. nov., *C. lowryi* sp. nov., *C. oneai* sp. nov., *C. popai* sp. nov., *C. pumila* Gamô, 1960, Petrescu, 1995, *C. spinifera* Petrescu, 2006, *C. stanae* sp. nov., *C. thompsoni* Hale, 1945, *C. totzkei* Mülenhardt-Siegel, 2000, *C. vasilescui* sp. nov. (Table 1).

**Distribution.** Australia: NSW—east of Broken Bay, at 914 m depth.

**Table 1.** Morphological characters of *Campylaspis keablei* compared with other species.

Species	Carapace sulcus, transverse ridge	Mxp 3 to prop. with serrate medial margin	P1 with robust articles	Urp short and robust, serrate margins	Urp endopod, more robust, with lateral setae
<i>C. keablei</i>	large sulcus, transv. ridge	basis to prop., serrate	robust	short, robust, serrate	robust, 5 setae
<i>C. stanae</i>	large sulcus	basis to prop., serrate	robust	short, robust, serrate	robust, 5 setae
<i>C. hangiuae</i>	large sulcus	merus to prop., serrate	robust	short, robust, serrate	robust, 3 setae
<i>C. oneai</i>	large sulcus, transv. ridge	carpus serrate	slender	short, robust, serrate	robust, 3 setae
<i>C. akabensis</i>	without sulcus	basis to prop., serrate	robust	short, robust, serrate	robust, 4 setae
<i>C. totzkei</i>	without sulcus	basis to prop., serrate	robust	short, robust, serrate	endopod, robust, 2 setae
<i>C. amblyoda</i>	without sulcus	basis to prop., serrate	robust	long, slender, serrate	robust, 4 setae
<i>C. pumila</i>	without sulcus	basis to prop., serrate	robust	long, slender, smooth	robust, 4 setae
<i>C. thompsoni</i>	without sulcus	basis to prop., serrate	robust	long, slender, smooth	robust, 4 setae
<i>C. calmani</i>	large sulcus, transv. ridge	basis to prop., serrate	robust	long, slender, smooth	robust, 4 setae
<i>C. popai</i>	without sulcus	basis to prop., serrate	slender	long, slender, smooth	slender, 7 setae
<i>C. lowryi</i>	large sulcus	basis to carpus, serrate	robust	long, slender, serrate	slender, 5 setae
<i>C. edenensis</i>	large sulcus, transv. ridge	basis to prop., serrate	robust	short, robust, serrate	robust, 3 setae
<i>C. spinifera</i>	sulcus	basis, merus & carpus, serrate	slender	short, robust, serrate	robust, 3 setae
<i>C. vasilescui</i>	large sulcus	basis, merus to prop., serrate	robust	short, robust, serrate	robust, 3 setae

### *Campylaspis latidactyla* Hale, 1945

Fig. 19

*Campylaspis latidactyla* Hale, 1945: 194, figs 33, 34.—  
Stoddart & Lowry, 2003: 412.

**Material examined:** 1♂, P.88239; 1♀, P.65620; 1♀, P.65045; 1♀, P.65046.

**Remarks.** Hale described this species based only on non-ovigerous female. Our females are similar with original description.

**Description of male.** Body length 12.2 mm. —*Carapace* 0.45 body length, 1.6 as long as wide; sulcus 0.72 carapace length; ocular lobe with 3 lenses; pseudorostrum 0.3 carapace length (Fig. 19 A, B). —*Maxilliped 3* basis 0.47 article's length, 2 pappose and 2 simple setae; merus 4.9 ischium length, with 1 pappose; carpus 0.38 merus length; propodus 0.85 carpus length; merus to propodus with serrated medial margins; dactylus 0.6 propodus length, with 3 simple setae; with exopod (Fig. 19 C). —*Pereopod 1* basis 0.9 rest of article's length, with 1 simple and 2 pappose setae; merus 0.86 carpus length; propodus 0.7 carpus length, with 2 simple setae and 2 pappose setae; dactylus 0.4 propodus length; with exopod (Fig. 19 D). —*Pereopod 2* basis 0.72 rest of article's length; carpus 1.6 merus length, with 1 plumose seta; dactylus 3.25 propodus length; with exopod (Fig. 19 E, F). —*Pereopods 3–5* with decreasing basis and increasing carpus length (pereopod 5 carpus as long as in pereopods 3 and 4); dactylus fused with terminal simple seta; pereopods 3 and 4 with exopods (Fig. 19 G, H). —*Uropod* peduncle 2.18 pleonite 6 length, 2.18 endopod length, with 3 simple and 6 microserrate setae; exopod 0.86 endopod length, with 1 simple and 1 microserrate seta, 1 terminal microserrate seta; endopod with 6 simple and 2 microserrate and 1 terminal robust microserrate seta (Fig. 19 J).

**Remarks.** *Campylaspis latidactyla* male has maxilliped 3 merus 4.9 ischium length, longer than in female; uropod peduncle 2.18 pleonite 6 length vs. 2.66 in female of Hale.

**Distribution.** Australia: QLD—Moreton Bay, and NSW (Hale, 1945; Petrescu, 2006); at 0–200 m. The species is now recorded from the Arafura Sea (NT)—Oxley Island, at 5–30 m depth (Petrescu, 2018).

### *Campylaspis lowryi* sp. nov.

Fig. 20

**Holotype** subadult ♀, 2.83 mm, P.63963, Australia, WA, North West Shelf, -19.9717° 117.8233°, 43 m, 25 Jun 1983, CSIRO North-West Shelf project, FRV *Soela*, 03-D1-S | S03-83-01D, in AM. **Paratype:** 1♀, P.63969, Australia, WA, North West Shelf, -19.94° 117.8983°, 44 m, 25 Jun 1983, CSIRO North-West Shelf project, FRV *Soela*, 03-B2-S | 0383 B02 S, in AM.

**Etymology.** The species is dedicated to Dr Jim Lowry, retired Principal Research Scientist, specialist in tropical Amphipoda, from the Australian Museum, as a sign of gratitude for all the generous help and advice he offered to me during my work in their collection of Cumacea.

**Diagnosis.** Carapace with 1 circular sulcus; pereopod 2 dactylus 4 propodus length, with digitiform tip; uropodal peduncle 2.16 pleonite 6 length, serrate, 2.4 exopod length; exopod 1.08 endopod length; both rami with terminal microserrate setae.

**Description.** *Carapace* 0.54 entire body length, 2 longer than high, 2 lateral ridges, as long as carapace, delimiting one circular sulcus; small ocular lobe with 3 small lenses, small tubercle at basis; small antennal notch (Fig. 20 A, B). —*Antenna 1* peduncle article 1 0.8 rest of article's length; article 3 0.9 article 2 length; main flagellum 1.25 article 3 length; accessory flagellum with 1 article; aesthetascs 0.75 main flagellum length (Fig. 20 C). —*Maxilliped 3* basis 0.84 rest of article's length, with 3 plumose setae; ischium with 2 teeth; merus, 2 carpus length, with 6 short setae interspersed with short teeth on medial margin, 2 spines and 1 pappose seta; carpus 0.5 merus length, with 1 pappose seta; propodus 1.4 carpus length, with 1 lateral simple and 3 pappose setae; dactylus 0.58 propodus length, with 4 long terminal simple setae; with exopod (Fig. 20 D). —*Pereopod 1* basis 0.8 rest of article's length, with 2 pappose setae; ischium with 1 pappose seta; merus 1.15 ischium length, with 5 pappose setae; carpus 1.13 merus length, with 6 pappose setae; propodus 2.5 carpus length, with 5 pappose setae; dactylus 0.4 propodus length, with 4 terminal simple setae; with exopod (Fig. 20 E). —*Pereopod 2* 0.33 rest of article's length; merus 2.3 ischium length, with 2 plumose setae; carpus 1.76 merus length, with 3 plumose and 3 simple setae; dactylus 4 propodus length, with 8 simple setae and digitiform tip; with exopod (Fig. 20 F). —*Pereopods 3–4* with decreasing basis and increasing carpus length; short dactylus with a long terminal seta (Fig. 20 G, H). —*Pereopod 5* basis 0.6 rest of article's length; merus 1.5 ischium length; ischium and merus with 1 simple seta; carpus 1.6 merus length, with 1 simple and 1 annulate seta; propodus 0.4 carpus length with 1 annulate seta; dactylus 0.6 propodus length, with terminal simple seta (Fig. 20 I). —*Uropod* peduncle 2.16 pleonite 6 length, serrate medially, 2.4 exopod length; exopod 1.08 endopod length, with 1 simple subterminal and 1 microserrate seta, 1 terminal microserrate seta 0.7 exopod length; endopod with 4 simple setae and 1 microserrate seta medially, 1 terminal microserrate robust seta 0.8 endopod length (Fig. 20 J).

**Remarks.** *Campylaspis lowryi* sp. nov. is closely related to *C. radui* sp. nov., having a similar circular sulcus on carapace. It differs in having an eyelobe with lenses, the maxilliped 3 merus longer than the carpus, the pereopod 2 dactylus with a pedunculate tip, and the uropodal endopod with 5 medial setae instead of 4 in *C. radui* sp. nov.

**Distribution.** Australia: WA—North West Shelf, at 43–44 m depth.

### *Campylaspis marinescui* sp. nov.

Fig. 21

**Holotype** subadult ♀, 5.25 mm, P.88231, Australia, NSW, north-east of Eden, -37.0033° 150.335°, 250–300 m, Waren dredge, shelly bryozoan sand, 11 Dec 1986, P.A. Hutchings, W.F. Ponder, R.T. Springthorpe, RV *Franklin*, FR1086-05, in AM. **Paratypes:** 1♀, 1♂, P.88234; 1♂, MGAB CUM 1657; 1♂, P.88233; 2♀♀, 5♂♂, P.88232; 1♀ (diss.), MGAB CUM 1656.

**Etymology.** The species is dedicated to Alexandru Marinescu, distinguished specialist in exhibitions and history of science, from the “Grigore Antipa” Museum, as a sign of high gratitude and respect for his brilliant work he done in the museum, with the occasion of his anniversary of 70 years.

**Diagnosis.** Carapace 0.47 body length, with rows of tubercles of various sizes; 1 pair of tubercles on basis of frontal lobe; pleonite 5 with 1 dorsal, 1 ventral and 1 pair of lateral teeth; maxilliped 2 propodal seta little longer than dactylar teeth; pereopod 2 dactylus with usual tip; uropodal peduncle 2.25 pleonite 6 length, 1.6 endopod length; exopod 0.9 endopod length; endopod with 4 microserrate setae.

**Description.** Carapace 0.47 body length, covered with longitudinal rows of large and smaller tubercles; 2 longer than high, with 1 spine on ocular lobe, 1 pair of large tubercles at basis of frontal lobe; antennal notch present; small ocular lobe, eyeless pseudorostral lobes 0.21 carapace length, meeting in front of ocular lobe (Fig. 21 A, B). —Pereonite 1 almost covered by carapace (Fig. 21 A). —Pleonite 5 with 1 dorsal, 1 ventral and 1 pair of lateral teeth. —Antenna 1 peduncle article 1 0.5 rest of article’s length; article 2 1.2 article 3 length; main flagellum 1.8 article 3 length, with 3 articles; accessory flagellum with 1 article; aesthetascs 0.8 main flagellum length (Fig. 21 C). —Maxilliped 2 basis fused with ischium, with 1 plumose seta; merus with 1 plumose seta; carpus with 1 simple seta and 1 short tooth; propodus, with 1 short tooth and 1 simple seta, little longer than short dactylar teeth (Fig. 21 D). —Maxilliped 3 basis 1.2 rest of article’s length, with 4 plumose setae; merus, with 1 process and 1 plumose, 1 simple seta and 1 tooth; carpus 0.7 propodus length, with 1 plumose, 4 simple setae and 3 teeth; propodus 2 dactylus length, with 1 plumose and 2 pappose setae; dactylus 0.4 propodus length, with 4 simple setae; with exopod (Fig. 21 E). —Pereopod 1 basis 0.9 rest of article’s length, short serration medially, 2 plumose setae; ischium with 1 plumose seta and 1 tooth; merus 2.4 ischium length, with 1 simple and 3 pappose setae, 1 short tooth; carpus as long as propodus, with 5 simple setae; propodus 1.2 dactylus length, with 1 plumose and 6 simple setae; dactylus with 4 simple setae; with exopod (Fig. 21 F). —Pereopod 2 basis 0.47 rest of article’s length, serrate margins, with 3 simple setae; merus 4.3 ischium length, with 3 simple setae; carpus 2 merus length, with 1 short robust and 4 simple setae; propodus with 1 simple seta; dactylus 5.2 propodus length, with 6 simple and 4 plumose setae, normal tip; with exopod (Fig. 21 G). —Pereopods 3–5 with decreasing basis and increasing carpus; with simple long setae; dactylus fused with terminal seta (Fig. 21 H–J). —Uropod 2.25 pleonite 6 length, 1.6 endopod length, with serrate margins; exopod 0.9 endopod length, with 1 long simple seta; endopod with 1 simple, 4 medial microserrate and 1 terminal serrate seta, shorter than in exopod (Fig. 21 K).

**Remarks.** *Campylaspis marinescui* sp. nov. is related to *C. heardi* sp. nov., both species without lateral a sulcus and with carapace covered with numerous tubercles. It differs in: carapace with tubercles without spines; maxilliped 3 with merus shorter than in *C. heardi*, with fewer teeth; carpus shorter than merus vs. longer; propodus as long as carpus vs. shorter; uropod with shorter peduncle, endopod with 4 vs. 2 medial setae.

**Distribution.** Australia: NSW—northeast of Eden, east of Broken Bay, of Terrigal, and of Long Reef, at 250–914 m depth.

### *Campylaspis matacheae* sp. nov.

Fig. 22

**Holotype** subadult ♀, 5.0 mm, P.64574, Australia, WA, North West Shelf, -19.93° 117.93°, 42 m, 22 Apr 1983, CSIRO North-West Shelf project, FRV *Soela*, 02-B3-S | 0283 B03 S, in AM.

**Etymology.** The species is dedicated to my colleague Ioana Matache, renowned specialist in Insecta Hymenoptera Apoidea, as a sign of gratitude and friendship.

**Diagnosis.** Carapace, 0.52 body length, with 2 lateral, parallel sulci; maxilliped 2 propodus 1.5 carpus length; maxilliped 3 robust basis; merus to propodus with teeth medially; pereopod 1 merus, 2nd longest article; pereopod 2 dactylus with short digitiform tip; uropodal peduncle 2.4 pleonite 6 length, 2.25 endopod length, endopod with 4 microserrate setae medially.

**Description.** Carapace, 0.52 body length, 1.58 as long as high, 1.45 as long as wide; with numerous small tubercles; small eyelobe without lenses; pseudorostrum 0.28 carapace length; small antennal notch; smooth ventral margin; 2 lateral, parallel sulci, 0.8 carapace length (Fig. 22 A, B). —Antenna 1 peduncle article 1 0.57 rest of article length; article 2 with 1 simple seta, 0.9 article 3 length; main flagellum 0.73 article 3 length; accessory flagellum with 1 article; aesthetascs 1.5 article 3 length (Fig. 22 C). —Maxilliped 2, basis 0.79 rest of article’s length, with 1 plumose seta; ischium 0.2 basis length, as long as merus; carpus 2 as long as merus, setulated margins, with 1 pappose seta; propodus 1.5 carpus length, 1 robust long simple seta; dactylus produced as 3 teeth (Fig. 22 D). —Maxilliped 3, robust basis, 0.52 rest of article’s length, 1 simple and 3 plumose setae, ischium 0.34 of basis length, merus 3.1 ischium length, small teeth with 8 setulae, 1 pappose and 3 plumose setae; carpus 0.37 merus length, with 3 long teeth, 1 pappose and 3 simple setae; propodus 1.06 carpus length, with 5 teeth and 3 pappose setae margin; dactylus 0.55 propodus length, 3 terminal setae, 2.5 dactylus length; with exopod (Fig. 22 E). —Pereopod 1, basis 0.69 rest of article’s length, 1 pappose and 2 plumose setae; ischium 0.13 basis length, 1 strong tooth on medial margin; merus 4 ischium length, with 6 teeth, 4 plumose and 5 pappose setae; carpus 0.65 merus length, 1 pappose and 5 simple setae; propodus 0.96 carpus length, 3 simple and 3 pappose setae; dactylus 0.44 propodus length, 1 simple, 3 pappose setae and 1 terminal simple seta; with exopod (Fig. 22 F). —Pereopod 2, basis 0.58 rest of article’s length, 1 simple, 1 plumose and 4 pappose setae; ischium 0.15 basis length; merus 2 ischium length, with 2 simple and 2 plumose setae; carpus 1.7 merus length, with 1 pappose, 3 simple and 3 plumose setae; propodus 0.3 carpus length; dactylus 4.2 propodus length, with 11 short simple setae, digitiform tip; with exopod (Fig. 22 G). —Pereopod 3, basis 0.5 entire pereopod length; ischium with 1 simple seta; merus 2 ischium length, with 1 pappose; carpus 1.65 merus length, with 1 pappose and 1 annulate seta; propodus 0.28 carpus length, 1 annulate seta; dactylus fused with terminal robust seta (Fig. 22 H). —Pereopod 4, basis 1.03 rest of article’s length, with 1 microserrate seta; ischium 0.17 basis length, with 2 simple setae; merus 1.7 ischium length, 1 simple and 1 pappose seta; carpus 1.33 merus length, 1 microserrate and 1 simple seta; propodus 0.25 carpus length, with 1 microserrate and 1 annulate seta; dactylus fused with terminal robust seta

(Fig. 22 I).—*Pereopod 5*, basis 0.9 rest of article's length; ischium with 1 simple seta; merus 1.5 ischium length, with 1 pappose seta on medial margin; carpus 1.5 merus length, with 1 plumose and 1 annulate seta; propodus 0.2 carpus length, with 1 annulate; dactylus fused with terminal robust seta (Fig. 22 J).—*Uropod* peduncle 2.4 pleonite 6 length, 2.25 endopod length, 2 simple and 8 microserrate setae medially; exopod as long as endopod, with 2 simple and 1 terminal microserrate seta; endopod, 4 microserrate setae medially and 1 microserrate terminal seta, broken (Fig. 22 K).

**Remarks.** The new species is related to *C. sculptaspinosa* Gerken, 2012 from New Zealand, sharing two parallel sulci; it differs by: no large tubercles on frontal lobe vs. 1 pair in *C. sculptaspinosa*; maxilliped 2 with long propodus in *C. matacheae* sp. nov. vs. shorter propodus, long propodal seta vs. short seta in *C. sculptaspinosa*; short dactylus in *C. matacheae* vs. long dactylus; maxilliped 3 with robust articles vs. slender articles; pereopod 1 with more plumose and pappose setae; dactylus 4.2 propodus length vs. 3.5 in *C. sculptaspinosa*; uropodal peduncle with microserrate setae vs. simple setae, endopod with 4 setae medially in *C. matacheae* vs. 3 setae.

**Distribution.** Australia: WA—North West Shelf, at 42 m depth.

### *Campylaspis minor* Hale, 1945

*Campylaspis minor* Hale, 1945: 197–199.—Stoddart & Lowry, 2003: 412.

**Material examined:** 1♀, P.88212; 1♀, P.64750; 1♂, P.64799; 1♀, P.88213; 1♀, P.64862; 1♀, P.64883; 1♀, P.64885; 2♀♀, P.64887; 1♀, P.64888; 1♀, P.64890; 2♀♀, P.64891; 1♀, P.64893; 1♀, P.64896; 1♀, MGAB CUM 1658; 1♂, P.64900; 1♀, P.64994; 2♂♂, P.64995; 1 manca, P.88211; 1 subadult ♂, P.65343; 1♀, P.65588; 1 subadult ♂, P.65591; 1♀, P.66048.

**Distribution.** Australia: NT—New Year and Oxley Islands, at 10–14 m; QLD—Lizard Island, at 3–18 m; NSW—northeast of Eden and east of Bermagui, at 42–300 m; TAS—Flinders Island, at 280–350 m; WA—Bundegi Flats and Dampier Archipelago at 10 m, and Monkey Mia.

### *Campylaspis mioarae* sp. nov.

Fig. 23

**Holotype** subadult ♀, 7.5 mm, P.88255, Australia, NSW, east of Long Reef, -33.72° 151.77°, 174 m, epibenthic sled, 20 Dec 1985, J.K. Lowry, R.T. Springthorpe, FRV *Kapala*, K85-21-08, in AM.

**Etymology.** The species is dedicated to the memory of my beloved aunt, Mioara Făgărașanu (1930–2001), as a sign of eternal love and gratitude for all the help and care she offered to me in her life.

**Diagnosis.** Carapace 0.44 body length, with small acute tubercles interspersed with pits, 1 larger pair of tubercles on basis frontal lobe; pereon and pleon with dorsal and lateral small teeth; maxilliped 2 propodus with 1 medial tooth;

pereopod 2 dactylus 3.3 propodus length, with pedunculate tip; uropodal peduncle 2 pleonite 6 length, 2.75 endopod length; endopod with 6 simple setae medially.

**Description.** Carapace 0.44 body length, 1.5 longer than high; with small acute tubercles and pits, 1 pair of larger tubercles on basis of frontal lobe; pseudorostrum 0.3 carapace length, meeting in front of ocular lobe; ocular lobe without lenses; antennal notch present; anterolateral margin serrated (Fig. 23 A, B).—*Pereon and pleon* with dorsal and lateral denticles.—*Maxilliped 2* basis fused with ischium, 1 plumose seta medially; merus with 1 plumose seta; carpus 1.5 merus length, with 1 tooth and 2 simple setae medially; propodus with 1 medial tooth and 1 robust seta, as long as 3 denticles of dactylus (Fig. 23 C).—*Maxilliped 3* basis 1.3 rest of article's length, with 3 simple and 7 plumose setae; large merus, 4.6 ischium length, with strong serrated margins, 3 simple and 2 plumose setae; carpus 0.7 merus length, with serrated margins, 1 plumose and 6 simple setae; propodus 0.5 carpus length, with 1 plumose and 2 pappose setae; dactylus 0.6 propodus length, with 3 simple setae; with exopod (Fig. 23 D).—*Pereopod 1* robust basis 0.8 rest of article's length, serrated medially with 5 plumose setae; merus 4.3 ischium length, with strong teeth, with 10 plumose setae; carpus 1.6 propodus length, serrated margins with 1 pappose and 4 simple setae; propodus 2 dactylus length, with 3 simple and 3 pappose setae; dactylus 0.5 propodus length, with 2 simple and 3 pappose setae; with exopod (Fig. 23 E).—*Pereopod 2* basis 0.3 pereopod length; merus 6 ischium length, with 1 long simple seta; carpus 2.75 propodus length, with 2 simple setae; dactylus 3.3 propodus length, with digitiform tip; with exopod (Fig. 23 F).—*Pereopods 3–5* with decreasing basis and increasing carpus length; ischium and merus with 1 simple seta; carpus and propodus with 1 annulate seta; dactylus with terminal simple seta (Fig. 23 G–I).—*Uropod* peduncle 2 pleonite 6 length, 2.75 endopod length, serrate margins; exopod 0.85 endopod length, with 2 simple setae; endopod with 6 simple setae medially and 1 terminal simple seta (Fig. 23 J).

**Remarks.** *Campylaspis mioarae* sp. nov. is closely related to *C. marinescui* sp. nov. by the carapace having tubercles; maxilliped 2 with one tooth on the propodus, as long as the dactylar teeth. *Campylaspis mioarae* sp. nov. differs with: carapace with acute tubercles with pit; maxilliped 3 with larger articles, without excavation on inner margin of merus, dactylus of pereopod 2 with a digitiform tip, uropod with 6 versus 4 setae on endopod.

**Distribution.** Australia: NSW—east of Long Reef, at 174 m depth.

### *Campylaspis nowrae* Petrescu, 2006

*Campylaspis nowrae* Petrescu, 2006: 145 figs 24, 25.

**Material examined:** 1♀, P.64745; 2♀♀, P.64753; 1♀, P.88249.

**Distribution.** Australia: NSW—off Nowra, 770 m depth (Petrescu, 2006); now also east of Long Reef, and QLD—east of Cape York; 403–795 m depth (Petrescu, 2018).

*Campylaspis oanae* sp. nov.

Fig. 24

**Holotype** subadult ♀, 3.57 mm, P.65544, Australia, WA, North West Shelf, -19.93° 117.93°, 43 m, sled, 26 Aug 1983, RV *Soela*, 04-B3-S | S04-83-B3, in AM.

**Etymology.** The species is dedicated to my colleague Dr Oana Paula Popa, specialist in molecular genetics of Mollusca, as sign of highly appreciation.

**Diagnosis.** Carapace 0.56 body length, 2 lateral sulci; pereopod 2 dactylus with digitiform tip; uropodal peduncle 2.72 pleonite 6 length, 2 its equal rami length, endopod with 4 microserrate setae.

**Description.** *Carapace*, 0.56 body length, 1.87 as long as high, 1.27 as long as wide, upper part of carapace granular; 1 pair of transversal dorsal ridges on basis of frontal lobe; 1 dorsal carina between basis of frontal lobe towards posterior extremity; 2 lateral sulci, 0.86 carapace length; pseudorostrum 0.3 carapace length; ocular lobe without lenses; smooth ventral margin (Fig. 24 A, B). —*Antenna 1* peduncle article 1 0.68 rest of article's length, with 1 simple and 1 pappose seta; article 2 as long as article 3; main flagellum 1.29 article 3 length, accessory flagellum with 1 article; aesthetascs 0.7 main flagellum length (Fig. 24 C). —*Maxilliped 3* basis 0.71 rest of article's length, with 5 plumose setae; merus to dactylus with serrate margins; merus 2.69 ischium length, with 1 plumose and 10 simple setae; carpus 1.71 propodus length, with 2 teeth, 2 plumose and 4 simple setae; propodus 0.63 dactylus length, with 2 pappose setae; dactylus 2 propodus length, with 3 terminal setae; with exopod (Fig. 24 D). —*Pereopod 1* basis 0.7 rest of article's length, with 1 plumose and 2 pappose setae; ischium with 2 pappose setae; merus 9 ischium length, with 10 pappose setae; carpus 0.27 merus length, with 2 simple and 5 pappose setae; propodus as long as carpus, with 3 simple and 4 pappose setae; dactylus 0.2 propodus length, with 3 simple and 2 pappose setae; with exopod (Fig. 24 E). —*Pereopod 2* basis 0.63 rest of article's length, with 3 pappose and 2 simple setae; ischium with 1 pappose seta; merus 2 ischium length, with 1 tooth, 1 simple and 1 pappose seta; carpus 1.03 merus length, with 4 simple and 6 pappose setae; propodus with 1 simple seta; dactylus 3.2 propodus length, with digitiform tip and 12 simple setae; with exopod (Fig. 24 F). —*Pereopods 3–5* with decreasing basis and increasing carpus length; pereopods 3 and 5 with basis to merus with 1 plumose seta, pereopod 4 ischium and merus with 1 plumose seta; dactylus fused with terminal robust seta (Fig. 24 G–I). —*Uropod* peduncle 2.72 pleonite 6 length, 2 endopod length, with 9 long simple setae interspersed with shorter setae; exopod as long as endopod, with 3 simple and 1 terminal microserrate robust seta; endopod with 4 microserrate short setae and 1 terminal robust microserrate seta (Fig. 24 J).

**Remarks.** The new species is closely related to *C. sculptaspinosa* Gerken, 2012 from New Zealand, also with two parallel sulci, but with four setae on medial margin of uropodal endopod versus three, maxilliped 3 merus larger and propodus shorter than dactylus, dactylus of 2nd pereopod with shorter setae.

**Distribution.** Australia: WA—North West Shelf, at 43 m depth.

*Campylaspis oanalexandru* sp. nov.

Fig. 25

**Holotype** postmanca ♂, 3.57 mm, P.88252, Australia, NSW, north-east of Eden, -37.00° 150.34°, 250–300 m, Waren dredge, shelly bryozoan sand, 11 Dec 1986, P.A. Hutchings, W.F. Ponder, R.T. Springthorpe, RV *Franklin*, FR1086-05, in AM.

**Etymology.** The species is dedicated to Oana and Alexandru Iftime, my colleagues and friends, my benefactors, as a sign of gratitude for their friendship and they showed me during my difficult period of 2005.

**Diagnosis.** Carapace 0.4 body length, with 1 acute dorsal tubercle; maxilliped 2 propodus with 1 tooth, with seta as long as dactylar teeth; pereopod 2 dactylus 3.4 propodus length, with digitiform tip; uropodal peduncle 1.5 pleonite 6 length, 1.03 endopod length, endopod 1.1 exopod length, with 2 setae medially.

**Description.** *Carapace* 0.4 body length, 2 longer than high; pseudorostrum 0.29 carapace length; without ocular lobe; frontal lobe with 1 dorsal and 1 lateral tubercle; anterolateral corner with 1 strong tooth; deep antennal notch (Fig. 25 A). —*Antenna 1* peduncle article 1 as long as rest of article's length, with 1 tooth; article 2 as long as article 3; main flagellum 1.5 peduncle article 3 length; accessory flagellum with 1 article; aesthetascs 0.8 main flagellum length (Fig. 25 B). —*Maxilliped 2* basis fused with ischium, with 1 plumose seta; merus with 1 plumose seta; carpus 3.3 merus length, with 2 simple seta and 1 tooth; propodus 1.4 carpus length, with 1 tooth and 1 simple seta as long as dactylar teeth (Fig. 25 C). —*Maxilliped 3* basis 0.4 maxilliped length, with 3 plumose setae; ischium with 1 robust tooth; ischium to dactylus with serrate margins; merus 3.1 ischium length, with 2 plumose setae; carpus as long as propodus, propodus with 1 strong medial tooth; with exopod (Fig. 25 D). —*Pereopod 1* basis 0.4 pereopod length, with 3 plumose setae; ischium to dactylus with serrate margins; merus 2.7 ischium length, with 2 plumose setae; carpus 0.4 merus length, with 1 simple and 2 plumose setae; propodus 1.1 carpus length, with 1 plumose and 3 pappose setae; dactylus 0.7 propodus length, with 4 simple setae; with exopod (Fig. 25 E). —*Pereopod 2* basis 0.4 rest of article's length; merus 7.5 ischium length, with 1 plumose seta; carpus 1.4 merus length, with 1 long simple seta; dactylus 3.4 propodus length, with 2 simple setae and digitiform tip; with exopod; with exopod (Fig. 25 F). —*Pereopods 3, 4* with decreasing basis and increasing carpus length; dactylus fused with terminal seta; with exopods (Fig. 25 G, H). —*Uropod* peduncle 1.5 pleonite 6 length, 1.03 endopod length, with serrate margins; exopod 0.8 endopod length, with 2 simple setae; endopod with 2 simple setae medially, long terminal simple seta (Fig. 25 I).

**Remarks.** *Campylaspis oanalexandru* sp. nov. is related to *C. panai* sp. nov., both without the lateral sulcus on the carapace, and with a digitiform tip on the dactylus of pereopod 2. It differs with: carapace smooth except for one pair of anterior tubercles vs. several tubercles in *C. panai*; stronger anterolateral tooth on carapace; maxilliped 3 with slender merus; pereopod 1 with fewer setae in *C.*

*oanalexandru*, pereopod 2 with dactylus 3.4 propodus in *C. oalaexandru* vs. 2.9 in *C. panai*; uropod with shorter peduncle and longer rami, 2 setae on endopod in *C. oanalexandru* vs. 3 setae in *C. panai*.

**Distribution.** Australia: NSW—northeast of Eden, at 250–300 m depth.

### *Campylaspis oneai* sp. nov.

Figs 26, 27

**Holotype** subadult ♂, 2.77 mm, P.88268, Australia, NSW, east of Long Reef, -33.72° 151.77°, 174 m, epibenthic sled, 20 Dec 1985, J.K. Lowry, R.T. Springthorpe, FRV *Kapala*, K85-21-08, in AM. **Paratypes**, 1♀, P.88269.

**Etymology.** The species is named in honour of Dr Nicolae Onea, renowned specialist in birds from Brăila Museum Complex, Natural Sciences Section, as a sign of profound friendship and gratitude for all the spiritual help he offered to me.

**Diagnosis.** Carapace with long lateral sulcus, with transverse ridge anteriorly; maxilliped 3 with narrow merus; robust uropods, uropod peduncle 1.86 pleopod 6 length in female and 1.65 in male, 3 setae on female endopod and 5 on male.

**Description of male.** *Carapace*, 0.51 body length, 1.9 as long as high, 1.6 as long as wide; large lateral sulcus, 0.8 carapace length; lateral ridge between posterior end of sulcus and posterior end of carapace; transverse ridge anteriorly; 6 dorsal tubercles; first tubercle on eyelobe; pseudorostrum 0.28 carapace length; small eyelobe, without lenses; marked antennal notch and anteroventral corner; smooth ventral margin (Fig. 26 A, B). —*Antenna 1* peduncle with short articles, article 1 0.9 as long as rest of articles; article 2 0.9 article 3 length; main flagellum 1.09 peduncle article 3; accessory flagellum with 1 article; aesthetascs 2.7 peduncle article 3 (Fig. 26 C). —*Maxilliped 3*, basis 0.77 rest of article's length, with 1 simple and 4 pappose setae; merus 4 ischium length, with 1 teeth on merus to propodus, 1 simple, 1 plumose and 1 pappose seta; carpus 0.4 merus length, with 1 pappose and 3 simple setae; propodus 0.7 carpus length, with 3 pappose setae; dactylus 0.6 propodus length, with 4 simple setae; with exopod (Fig. 26 D). —*Pereopod 1* basis 0.8 rest of article's length, with 2 plumose setae, a few teeth on basis to carpus; ischium with 1 plumose seta; merus 4 ischium length, with 2 simple and 3 plumose setae; carpus 0.9 merus length, with 4 simple short setae; propodus 0.7 carpus length, with 4 simple setae; dactylus 0.6 propodus length, with 5 simple setae; with exopod (Fig. 26 E). —*Pereopod 2* with robust articles, basis 0.6 rest of article's length, with 2 simple setae hyaline crest; merus 4.6 ischium length, with 1 pappose and 2 simple setae; carpus 1.7 merus length, with 2 simple and 2 pappose setae; dactylus 3.7 propodus length, with 8 simple setae; with exopod (Fig. 26 F). —*Pereopod 3* basis 1.6 rest of article's length; ischium with 1 simple seta; merus 1.6 ischium length, with 1 simple seta; carpus as long as ischium and merus, with 1 annulate seta; propodus 0.28 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta; with exopod (Fig. 26 G). —*Pereopod 4* with robust articles, basis as long as rest of article's length; merus 1.6 ischium length, 1 simple seta; carpus 1.8 merus length, with 1 short annulate seta; propodus 0.5 carpus

length, with 1 annulate seta; dactylus fused with terminal seta; with exopod (Fig. 26 H). —*Pereopod 5* basis 0.76 rest of article's length; merus 1.6 ischium length, with 1 simple seta; carpus 1.25 merus length; propodus 0.5 carpus length, with 1 annulate seta; dactylus fused with terminal robust seta (Fig. 26 I). —*Uropod* peduncle 1.65 pleonite 6, robust, with 1 ridge medially and serrate margins, 1.7 endopod length; exopod 0.85 endopod length, serrate margins, with 2 short simple and 1 terminal robust simple seta, 0.4 exopod length; endopod, with serrate margins, with 5 microserrate and 1 terminal simple seta, broken (Fig. 26 J).

**Description of female.** *Body length* 2.83 mm. —*Carapace* 0.59 body length, 2.3 as long as high, 1.6 as long as wide; sulcus 0.8 carapace length, bordered with pigment dots; transverse ridge anteriorly; eyeless ocular lobe; mid-dorsal crest, half of ventral margin tiny serrated; pseudorostrum 0.24 carapace length; carapace covering first two pereonites and partially 3rd pereonite (Fig. 27 A, B). Free pereonites and pleonites with mid-dorsal crest. —*Maxilliped 3* basis 0.7 rest of article's length; slender merus, 1.7 ischium length; carpus 0.6 merus length, with 1 pappose and 3 simple setae; propodus 1.2 carpus length, 1 plumose and 2 pappose setae; dactylus 0.5 propodus length, with 4 simple setae; with exopod (Fig. 27 C). —*Pereopod 1* basis 0.75 rest of article's length, with 1 plumose seta; merus 1.5 ischium length; carpus 1.6 merus length, with 2 simple setae; propodus 0.9 carpus, with 2 simple setae; dactylus 0.33 propodus length, with 5 simple setae; with exopod (Fig. 27 D). —*Pereopod 2* basis 0.56 length of remaining articles; merus 5.6 ischium length, 1 simple seta; carpus 2 merus length; dactylus 3 propodus length, with 9 simple setae; with exopod (Fig. 27 E). —*Pereopods 3–5* with decreasing basis and increasing carpus in pereopods 3 and 4, decreasing carpus in pereopod 5; with simple and annulate setae; dactylus fused with terminal simple seta (Fig. 27 F–H). —*Uropod* peduncle 1.86 pleonite 6 length, robust, microserrate medially, 2.05 endopod length; exopod 0.8 endopod length, with 2 simple and 1 terminal robust seta; endopod serrate medially, with 3 microserrate and 1 terminal microserrate seta (Fig. 27 I).

**Remarks.** *Campylaspis oneai* sp. nov. resembles *C. dumitrumurariui* sp. nov. in having a similar sulcus and anterior transverse ridge. *Campylaspis oneai* differs from *C. dumitrumurariui* in: carapace with tubercles vs. smooth, maxilliped 3 and pereopod 1 with shorter basis and longer merus, pereopod 2 with robust vs. slender carpus, shorter uropods with 5 vs. 9 medial setae on endopod.

**Distribution.** Australia: NSW—east of Long Reef, at 174 m; NT—New Year Island, at 10 m depth.

### *Campylaspis panai* sp. nov.

Fig. 28

**Holotype** subadult ♀, 3.65 mm, P.88197, Australia, NSW, north-east of Twofold Bay, -36.97° 150.37°, 960–1050 m, Waren dredge, thick grey mud with lumps of hard clay, 12 Dec 1986, P.A. Hutchings, W.F. Ponder, R.T. Springthorpe, RV Franklin, FR1086-07 | FR1086-7, in AM. **Paratypes**: 2♀♀, P.88196; 1♀ (diss.), MGAB CUM 1659, all same date as holotype.

**Etymology.** The species dedicated to the memory of my beloved friend Mihai Pană (1958–2005), as a sign of eternal love and friendship.

**Diagnosis.** Carapace 0.45 body length, longitudinal rows of tubercles, dorsolateral row with larger tubercles from basis of frontal lobe towards posterior end; maxilliped 2 propodus with 1 tooth; maxilliped 3 propodus 1.5 carpus length; pereopod 2 dactylus 2.9 propodus length, with digitiform tip; uropodal peduncle 2.3 pleonite 6 length, 2.4 rami length; exopod 1.05 endopod length; endopod with 3 setae medially.

**Description.** Carapace 0.45 body length, 1.5 longer than high, with longitudinal rows of tubercles, dorsal row with larger tubercles from basis of frontal lobe towards posterior end; short ocular lobe without visual elements; pseudorostrum 0.23 carapace length, little upturned, with 3 pairs of robust terminal setae, little exceeding ocular lobe; anterolateral margin with short serration; antennal notch, present (Fig. 28 A, B). —Antenna 1 peduncle article 1 0.75 rest of article's length; article 2 1.2 article 3; main flagellum with 3 articles, 1.3 distal article of peduncle length; accessory flagellum, minute, with 1 article; aesthetascs as long as main flagellum (Fig. 28 C). —Maxilliped 2 basis fused with ischium, with a plumose seta; merus with 1 plumose seta; carpus 1.05 merus length, with 1 tooth; propodus 1.4 carpus length, with 1 tooth and 1 robust seta little longer than tridentate dactylus (Fig. 28 D). —Maxilliped 3 basis 1.06 rest of article's length, 1 simple and 2 plumose setae; ischium with 1 simple seta; merus to propodus with serrate margins, merus 4.2 ischium length, with 1 plumose and 4 simple setae; carpus 0.26 merus length, with 3 plumose setae; propodus 1.5 carpus length, with 1 plumose and 2 pappose setae; dactylus 0.5 propodus length with 4 simple setae; with exopod (Fig. 28 E). —Pereopod 1 0.4 entire pereopod length, with 3 simple and 2 plumose setae; ischium with 1 plumose seta; merus, 3.8 carpus length, with 6 plumose setae; carpus 0.7 merus length, with 1 simple and 5 plumose setae; propodus 0.9 carpus length, with 1 plumose and 5 simple setae; dactylus 0.4 propodus length, with 5 simple setae; with exopod (Fig. 28 F). —Pereopod 2 basis 0.34 pereopod entire length, with 1 pappose seta; merus 10 ischium length, with 1 plumose and 2 simple setae; carpus 1.33 merus length, with 4 simple setae; dactylus 2.9 propodus length, with digitiform tip and 11 simple setae; with exopod (Fig. 28 G). —Pereopods 3–5 with decreasing basis and increasing carpus length, with simple, plumose and annulate setae; dactylus with short terminal simple seta (Fig. 34 H–J). —Uropod peduncle 2.3 pleonite 6 length, 2.4 rami length, serrate margins, 4 simple setae medially; exopod 1.05 endopod length, with 3 simple setae; endopod with 4 microserrate setae (Fig. 28 K).

**Remarks.** The new species is related to *C. oanalexandru* sp. nov. having no lateral sulcus, ocular lobe without lenses and pereopod 2 dactylus with digitiform tip. It differs with: carapace with tubercles vs. none in *C. oanalexandru*; maxilliped 3 with larger merus; pereopods, more setose; uropod with longer peduncle and shorter rami in *C. panai*.

**Distribution.** Australia: NSW—northeast of Twofold Bay, at 960–1050 m depth.

### *Campylaspis pauca* sp. nov.

Fig. 29

**Holotype** subadult ♀, 7.08 mm, P.64752, Coral Sea, north-eastern continental slope [of Australia],  $-18.18^{\circ}$   $147.53^{\circ}$ , 472–879 m, 26 Aug 1988, P.A. Hutchings, RV *Franklin*, FR0688-21 or 22 | FRO688, in AM.

**Etymology.** The species id dedicated to the memory of Prof. Dr Mircea Paucă (1903–1988), distinguished geologist and palaeontologist, who worked at the “Grigore Antipa” Museum during the period of Antipa's life, the only one who left memories regarding that period (1934–1944), as a sign of high posthumous gratitude for his moral and professional qualities.

**Diagnosis.** Carapace 0.42 body length, with rows of tubercles; maxilliped 2 merus with 2 and carpus with 3 tubercles, propodus with 1 tooth; uropodal peduncle 2.5 pleonite 6 length; 1.5 endopod length; endopod with 4 simple setae medially.

**Description.** Carapace 0.42 body length, 1.6 longer than high, with rows of acute tubercles, each tubercle surrounded by small plates; pseudorostrum 0.2 carapace length; anterior and anterolateral margins serrated; antennal notch small (Fig. 29 A, B). —Pereonites and pleonites with dorsal teeth. —Antenna 1 peduncle article 1 1.85 rest of article's length; article 2 1.1 article 3 length; main flagellum 1.3 peduncle distal article; accessory flagellum with 1 article; aesthetascs 1.4 main flagellum length (Fig. 29 C). —Maxilliped 2 basis with 1 plumose seta medially; merus 2.2 ischium length, with 2 tubercles and 1 plumose seta; carpus with 3 teeth and 2 simple setae; propodus 0.9 carpus length, with 1 tooth and short stout seta little longer than dactylar teeth (Fig. 29 D). —Maxilliped 3 basis 0.51 rest of article's length, with 5 simple and 8 plumose setae; merus 3.5 ischium length, with 1 tooth, 5 plumose and 2 plumose setae; carpus 0.45 merus length, with 1 simple, 1 plumose and 1 pappose seta; propodus 1.2 carpus length, with 1 plumose and 3 pappose setae; dactylus 0.7 propodus length, with 3 simple setae; basis, merus to dactylus with serrate margins; with exopod (Fig. 29 E). —Pereopod 1 basis 0.47 pereopod length, with 3 plumose setae, basis to propodus with serrate margins; ischium with 1 plumose seta; merus 2.2 ischium length, with 3 plumose and 2 simple setae; carpus 1.3 merus length, with 2 plumose and 5 simple setae; propodus 0.9 carpus length, with 3 simple and 2 plumose setae; dactylus 0.4 propodus length, with 6 simple setae; with exopod (Fig. 29 F). —Pereopod 2 basis 0.4 of total length; basis to carpus with serrate margins; ischium with 1 plumose seta; merus 3 ischium length, with 2 simple and 1 plumose seta; carpus 2.3 merus length, with 1 plumose and 4 simple setae; dactylus 4.3 propodus length, with a rounded tip and with 7 simple; with exopod (Fig. 29 G, H). —Pereopods 3–5 with decreasing basis and increasing carpus; dactylus fused with terminal simple seta; with simple, plumose and annulate setae (Fig. 29 I–K). —Uropod peduncle 2.5 pleonite 6 length, 1.5 endopod length; entire uropod with serrate margins, exopod broken; endopod with 4 simple setae medially, 1 terminal simple seta (Fig. 29 L).

**Remarks.** *Campylaspis pauca* sp. nov. resembles *C. panai* sp. nov. in having carapace tubercles, an eyeless ocular lobe, maxilliped 2 with short setae on the propodus. The new species differs from *C. panai* in: the integument of the

carapace with small tubercles vs. small and large tubercles in *C. panai*; the spiny pereonites and pleonites in *C. pauca* vs. smooth pereonites and pleonites; Antenna 1 peduncle basal article longer than in *C. panai*; maxilliped 2 with basis separate from ischium; ischium with 2 teeth vs. not teeth in *C. panai*, carpus with 2 teeth vs. 1 tooth; maxilliped 3 with slender merus in *C. pauca* vs. large articles in *C. panai*; pereopods 3, 4 with 4 plumose setae on basis in *C. pauca* vs. 1 plumose seta; uropod endopod with 4 setae in *C. pauca* vs. endopod with 3 setae.

**Distribution.** Coral Sea: from 472–879 m depth.

### *Campylaspis pileus* (Foxon, 1932)

*Cumella pileus* Foxon, 1932: 393, figs 9, 10.—Stoddart & Lowry, 2003: 412.

**Material examined:** 1♀, P.64575; 1♀, P.88236; 1♀, P.88235.

**Distribution.** Australia: WA, TAS, and the Great Barrier Reef, QLD, 22–200 m depth (Foxon, 1932; Petrescu, 2006). New records here from NSW—east of Broken Bay, at 1108–1115 m; and NT—New Year Island, at 20 m depth.

### *Campylaspis popai* sp. nov.

Fig. 30

**Holotype** ♀, 3.47 mm, P.64648, Australia, NSW, north-east of Port Jackson, -33.73° 151.95°, 820–888 m, beam trawl, 11 Feb 1986, R.T. Springthorpe, FRV *Kapala*, K86-01-07, in AM.

**Etymology.** The species is dedicated in honour of my colleague Dr Luis Popa, specialist in molecular biology, as a sign of sincere appreciation of his work.

**Diagnosis.** Carapace smooth; eyeless ocular lobe; merus of maxilliped 3.03 total length, merus to propodus with teeth on medial margin; pereopod 1 with carpus as long as propodus; dactylus of pereopod 2 with digitiform tip; uropodal peduncle 4.4 pleonite 6 length, 2.4 endopod length, endopod with 7 microserrate setae.

**Description.** *Carapace*, large, 0.52 rest of body length, covering almost first 3 pereonites; pseudorostrum 0.22 carapace length; large siphons; ocular lobe without lenses; smooth integument (Fig. 30 A, B). —*Antenna 1* peduncle article 1 as long as article 3; article 2 0.75 article 3 length; main flagellum 0.8 article 3 length; accessory flagellum with 1 article; aesthetascs 1.1 main flagellum length (Fig. 30 C). —*Maxilliped 3*, basis 0.77 rest of article's length, with 2 pappose setae; ischium to propodus serrate medially; ischium with 1 plumose seta; merus 0.31 maxilliped length, 3.33 ischium length, with 1 plumose and 7 simple setae; carpus 0.26 merus length, with 1 simple, 2 plumose and 1 pappose seta; propodus 1.1 carpus length, with 2 pappose setae; dactylus 0.6 propodus length, with 5 simple; with exopod (Fig. 30 D). —*Pereopod 1* basis 0.6 rest of article's length, 2 simple and 1 plumose seta; ischium with 1 simple and 1 plumose seta; merus 4.4 ischium length, with 1 simple and 3 plumose setae; carpus 0.33 merus length, with 5 plumose setae; propodus 0.9 carpus length, with 2 simple and 3 long plumose setae; dactylus 0.5 propodus length, with 5 simple setae; with exopod (Fig. 30 E). —*Pereopod 2* basis, 0.39

rest of article's length, with 1 simple seta; merus 4.3 ischium length, with 1 simple seta; carpus, longest article, 1.15 basis length, 3.3 merus length; dactylus 4.4 propodus length, with digitiform tip, with 8 simple setae; with exopod (Fig. 30 F). —*Pereopod 3* basis 1.43 rest of article's length, with 2 setae; merus 2.1 ischium length, with 1 simple seta; carpus 1.8 merus length, with 2 simple setae; propodus 0.33 carpus length, with 2 annulate setae; dactylus 0.55 propodus length, fused with terminal robust seta (Fig. 30 G). —*Pereopod 4*, basis 1.3 rest of article's length, with 1 simple seta; merus 2 ischium length carpus 2 merus length, with 1 annulate and 3 simple setae; propodus 0.35 carpus length, with 1 simple and 1 annulate seta; dactylus fused with terminal robust seta (Fig. 30 H). —*Pereopod 5*, basis 0.86 rest of article's length; merus 2 ischium length; carpus 1.7 merus length, with 1 annulate seta; propodus 0.3 carpus length, with 1 annulate seta; dactylus fused with terminal seta (Fig. 30 I). —*Uropod* peduncle 4.4 pleonite 6 length, 3 serrations proximally, 2.4 endopod length; exopod 0.89 endopod length, with 3 simple setae; endopod with 7 microserrate setae interspersed with setulae medially, 1 terminal microserrate robust seta 0.5 endopod length (Fig. 30 J).

**Remarks.** The new species resembles *C. cursaruae* sp. nov. with a smooth integument, small ocular lobe without lenses; very small antennal notch; maxilliped 3 with serrate medial margin, dactylus of 2nd pereopod with pedunculate tip. It differs with: carapace with a smooth anteroventral margin vs. serrate in *C. cursaruae*; maxilliped 3 with a longer merus; pereopod 1 with a shorter basis; pereopod 2 with a longer carpus and shorter dactylus; uropodal endopod with seven medial setae vs. four in *C. cursaruae* sp. nov.

**Distribution.** Australia: NSW—northeast of Port Jackson, at 820–888 m depth.

### *Campylaspis pustulosa* Hale, 1945

*Campylaspis pustulosa* Hale, 1945: 207, figs 43, 44.—Stoddart & Lowry, 2003: 412.

**Material examined:** 1♀, P.64704.

**Distribution.** Australia: NSW—northeast of Eden, and TAS at 70–600 m depth (Hale, 1945; Petrescu, 2006).

### *Campylaspis radui* sp. nov.

Fig. 31

**Holotype** subadult ♀, 4.80 mm, P.88244, Australia, NSW, north-east of Port Jackson, -33.68° 152°, 820–888 m, beam trawl, 11 Feb 1986, R.T. Springthorpe, FRV *Kapala*, K86-01-07, in AM. **Paratypes:** 1♀, P.88245; 1♀, P.64754.

**Etymology.** The species is dedicated to the memory of my father, Radu Petrescu, brilliant Romanian writer (1927–1982), as a sign of eternal love and high respect for his moral qualities, for all he offered to his son.

**Diagnosis.** Carapace 0.48 entire body length, lateral sulcus all around carapace, bordered dorsally by a robust ridge and ventrally by a narrow ridge, 1 pair of small tubercles on basis of frontal lobe; propodus of 2nd maxilliped with 1 medial seta as long as dactylar teeth; dactylus of 2nd pereopod with terminal seta; uropodal peduncle 2.1 pleonite 6 length, 1.9 endopod length; exopod 0.85 endopod length; endopod with

4 simple setae medially.

**Description.** *Carapace* 0.48 body length, 1.8 as long as high, long lateral sulcus all around carapace, bordered dorsally by a robust ridge and ventrally by a narrow ridge; pseudorostrum lobes meeting in front of eyeless, short, ocular lobe; 1 pair of small tubercles on basis of frontal lobe; small notch; smooth anterolateral margin (Fig. 31 A, B). —*Antenna 1* peduncle article 1 as long as rest of article's length; article 2 1.4 article 3 length; main flagellum with 3 articles; accessory flagellum with 1 article; aesthetascs 1.6 main flagellum length (Fig. 31 C). —*Maxilliped 2* basis fused with ischium, basis and merus with 1 simple and 1 plumose seta; merus with 1 plumose seta; carpus 0.9 merus length, with 1 tooth and 2 simple setae; propodus 1.6, with seta as long as dactylar central teeth (Fig. 31 D). —*Maxilliped 3* basis 0.5 maxilliped length, with 4 plumose setae; merus 1.55 ischium length, with 1 simple and 2 plumose setae; carpus 1.2 merus length, with 2 simple and 2 plumose setae; propodus as long as carpus, with 3 plumose setae; dactylus 0.5 propodus length, with 4 simple terminal setae; with exopod (Fig. 31 E). —*Pereopod 1* basis 1.1 rest of article's length, basis to carpus with serrate margins, with 1 simple and 3 plumose setae; ischium with 1 plumose seta; merus 2 ischium length, with 5 simple and 3 plumose setae; carpus 1.1 merus length, with 4 simple and 3 plumose setae; propodus 0.7 carpus length, with 4 simple and 2 plumose setae; dactylus 0.8 propodus length, with 4 simple setae; with exopod (Fig. 31 F). —*Pereopod 2* basis 0.6 rest of article's length; merus 0.3 ischium length, with 1 simple seta; carpus 2.5 merus length, with 4 simple setae; dactylus 4 propodus length, with 9 simple setae, straight acute tip; with exopod (Fig. 31 G). —*Pereopod 3* basis 1.3 rest of article's length, with 1 simple seta; ischium with 1 simple seta; merus 1.5 ischium length, with 1 simple seta; carpus 2.3 merus length, with 1 annulate seta; propodus 0.3 carpus length, with 1 annulate seta; dactylus 0.6 propodus length, with 2 simple setae (Fig. 31 H). —*Pereopod 4* basis 1.2 rest of article's length, with 1 simple seta; ischium with 1 simple seta; merus 1.1 ischium length, with 1 plumose seta; carpus 2.5 merus length, with 1 plumose and 1 annulate seta; propodus 0.26 carpus length, with 1 annulate seta; dactylus 0.5 propodus length, with 2 simple setae (Fig. 31 I). —*Pereopod 5* basis 0.66 rest of articles combined length, with 2 simple setae; ischium with 1 simple seta; merus 1.4 ischium length, with 1 plumose seta; carpus 1.8 merus length, 1 simple, 1 plumose and 1 annulate seta; propodus 0.4 carpus length, with 1 annulate seta; dactylus 0.4 propodus length, with 2 simple setae (Fig. 31 J). —*Uropod* peduncle 2.1 pleonite 6 length,

1.9 endopod length, serrated medially; exopod 0.9 endopod length, with 3 simple setae; endopod with 5 simple and 1 terminal simple seta (Fig. 31 K).

**Remarks.** *Campylaspis radui* sp. nov. is similar to other species: *C. pumila* Gamô, 1960 from Japan, *C. thetidis* Hale, 1945, *C. latimera* Petrescu, 2006, *C. rectangulata* Petrescu, 2006 and *C. sculpta* Petrescu, 2006 and *C. lowryi* sp. nov. from Australia (Table 2).

**Distribution.** Australia: NSW—northeast of Port Jackson, at 820 m depth.

### *Campylaspis rectangulata* Petrescu, 2006

*Campylaspis rectangulata* Petrescu, 2006: 147, figs 27, 28.

**Material examined:** 1♂, P.88267; 1♀, 1♂, P.88266.

**Distribution.** Australia: NSW—off Nowra, at 503 m depth (Petrescu, 2006). Species now reported from east of Long Reef Point (NSW), at 176 m depth (Petrescu, 2018).

### *Campylaspis roccatagliatai* sp. nov.

Fig. 32

**Holotype** subadult ♀, 2.33 mm, Australia, WA, Rottnest Island, Thompsons Bay, -32° 115.55°, 3 m, airlift, Posidonia bed, 20 Dec 1983, J.K. Lowry, R.T. Springthorpe, WA-220, in AM. **Paratypes:** 1♀, P.88271; 1♀, MGAB CUM 1662.

**Etymology.** Species dedicated to Dr Daniel Carlos Roccatagliata, world famous specialist in Cumacea (University of Buenos Aires, Argentina), as a sign of gratitude for the extreme friendship he has shown me over time.

**Diagnosis.** Carapace 0.47 entire body length, 2 lateral sulci, dorsal carina; maxilliped 2 propodus with seta little exceeding dactylar teeth; pereopod 2 dactylus 3.8 propodus length, with digitiform tip; uropodal peduncle 1.3 pleonite 6 length, 1.4 exopod length, exopod little longer than endopod, endopod with 2 setae on medial margin.

**Description.** *Carapace* 0.47 entire body length, 2 longer than high; pseudorostrum little upturned, meeting in front of eyeless ocular lobe, 2 lateral sulci, dorsal carina on posterior half; antennal notch obsolete (Fig. 32 A, B). —*Antenna 1*

**Table 2.** Morphological characters of *Campylaspis radui* sp. nov. in common with other species.

Species	<i>C. radui</i>	<i>C. pumila</i>	<i>C. latimera</i>	<i>C. rectangulata</i>	<i>C. sculpta</i>	<i>C. lowryi</i>	<i>C. thetidis</i>
Crp sulcus	all around	not all around	not all around	not all around	not all around	all around	not all around
Crp tubercles	—	—	—	—	—	—	—
Mxp 3 ischium-prop.	large	large	large	large	large	ischium-carpus	large
Mxp 3 merus excavation	—	—	+	+	—	—	—
Mxp 3 dactyl	slender	slender	slender	slender	large	slender	slender
P1 ischium-carpus	large	slender	large	large	large	slender	large
P1 merus	straight	straight	excavated	excavated	excavated	straight	straight
P1 dactyl.	slender	slender	slender	slender	large	slender	slender
P2 digit. tip	—	—	—	—	+	—	+
Urp	slender rami	slender	slender	slender	large	slender	large
Urp endopod setae	4	4	4	3	3	5	2

peduncle article 1 0.65 rest of article's length; article 2 1.25 article 3 length; main flagellum with large articles, accessory flagellum with 1 article, aesthetascs 1.4 main flagellum (Fig. 32 C).—*Maxilliped* 2 basis fused with ischium, with plumose seta; merus with plumose seta; carpus 2 merus length, with 2 simple setae; propodus, 1.6 carpus length, with 1 tooth, 1 seta exceeding dactylar teeth; dactylus teeth, central one short (Fig. 32 D).—*Maxilliped* 3 basis 0.9 rest of article's length, with 4 plumose setae; ischium with 1 plumose seta; merus, 1.4 ischium length, with 3 plumose seta; carpus 0.3 merus length, with 1 plumose seta; propodus 1.8 carpus length, with 1 plumose and 2 pappose setae; dactylus 0.4 of propodus length, with 4 simple setae; with exopod (Fig. 32 E).—*Pereopod* 1 with robust articles, basis 0.4 rest of article's length, with 3 plumose setae; ischium with 1 plumose seta; merus 2.3 ischium length, with 5 plumose setae; carpus 0.8 merus length, with 3 simple and 2 plumose setae; propodus as long as carpus, with 2 simple and 2 plumose setae; dactylus 0.8 propodus length, with 4 simple setae; with exopod (Fig. 32 F).—*Pereopod* 2 with robust articles, basis 0.3 rest of article's length, with 1 simple seta; merus 7.5 ischium length, with 1 simple and 2 plumose setae; carpus 1.2 merus length, with 1 short robust and 4 simple setae; dactylus 3.8 propodus length, with digitiform tip, with 9 simple short simple setae; with exopod (Fig. 32 G).—*Pereopods* 3–5 with robust articles, with decreasing basis and increasing carpus; 1 simple and 2 plumose setae in pereopod 3 and 4, 1 simple in pereopod 5; ischium and merus with 1 simple seta; carpus with 2 annulate setae; propodus with 1 annulate seta; dactylus fused with terminal stout seta (Fig. 32 H–J).—*Uropod* peduncle 1.3 pleonite 6 length, 1.4 rami, serrate medially; exopod 1.02 endopod length, with 4 simple setae; endopod with serrate margins, 3 simple short setae and 1 stout terminal simple seta (Fig. 32 K).

**Remarks.** *Campylaspis roccatagliatai* sp. nov. has a carapace that resembles that of *C. johnstoni* Hale, 1937, *C. latidactyla* Hale, 1945, *C. lowryi* sp. nov., and *C. udrescui* sp. nov. It differs in having: an eyeless ocular lobe versus lenses present in *C. latidactyla*, two lateral depressions instead of one in *C. johnstoni* and *C. latidactyla*, endopod of uropod with two lateral setae instead of three in *C. udrescui* and five in *C. lowryi*. *Campylaspis roccatagliatai* has the pereopod 2 dactylus with a digitiform tip stronger than in *C. udrescui*, without a process as in *C. latidactyla*. A similar dactylus of pereopod 2 is also present in the Japanese species, *C. fusiformis* Gamô, 1960b and *C. granulata* Gamô, 1960a, but with a rounded dactylar tip and with visual elements, missing in *C. roccatagliatai*. The form of the dactylus of pereopods 3–5 of *C. roccatagliatai* is different from all these species, with short and robust article fused with short and robust terminal seta vs. longer and slender dactylus and seta as in *C. johnstoni*, *C. latidactyla*, *C. udrescui* or dactylus not fused with seta like in *C. fusiformis*, *C. granulata* and *C. lowryi*.

**Distribution.** Australia: WA—Rottnest Island, at 3 m depth.

### *Campylaspis roscida* Hale, 1945

*Campylaspis roscida* Hale, 1945: 202–204.—Stoddart & Lowry, 2003: 412.

**Material examined:** 1♂, P.64785; 1♀, P.64849.

**Distribution.** Australia: NSW and TAS, at 10–100 m. The species now recorded from the Arafura Sea (NT), at 10–20 m depth.

### *Campylaspis sienkiewiczi* sp. nov.

Fig. 33

**Holotype** ♀, 3.44 mm, P.88216, Australia, NSW, north-east of Port Jackson, -33.68° 152.00°, 820–888 m, beam trawl, 11 Feb 1986, R.T. Springthorpe, FRV *Kapala*, K86-01-07, in AM. **Paratypes:** 1♀, P.65303; 1 subadult ♂, P.65557.

**Etymology.** The species is dedicated to the memory of Dr Igor Sienkiewicz (1907–2006), a brilliant specialist in Heteroptera, who worked for a short period of time but left unforgettable traces in the “Grigore Antipa” Museum (1956–1964) and in the Romanian history of science, as a sign of high gratitude for his moral and professional qualities.

**Diagnosis.** Carapace 0.5 body length, 2 lateral sulci delimited by 3 ridges; pereopod 2 dactylus 3 propodus length, with digitiform tip; uropodal peduncle 2 pleonite 6 length, 1.6 endopod length, exopod shorter than endopod, endopod with 3 setae on medial margin.

**Description.** Carapace 0.47 body length, 2.3 as long as high; 2 lateral sulci delimited by 3 ridges; pseudorostral lobes 0.3 carapace length, meeting in front of eyeless minute ocular lobe; tiny antennal notch (Fig. 33 A, B).—*Antenna* 1 peduncle article 1 0.85 rest of article's length, with 1 simple seta; article 2 as long as article 3, with 1 simple seta; main flagellum with 3 articles, 0.7 peduncle apical article, accessory flagellum with 1 article; aesthetascs 2 main flagellum length (Fig. 33 C).—*Maxilliped* 2 basis fused with ischium, with plumose seta; merus with 1 plumose seta; carpus 2.8 merus length, with 1 simple seta; propodus 1.8 carpus length, with short tooth and 2 simple setae; short tridentate dactylar teeth equal in length (Fig. 33 D).—*Maxilliped* 3 basis 0.8 rest of article's length, with 4 plumose setae and 1 robust tooth medially; merus, 4.5 ischium length, with 1 plumose and 5 simple setae; carpus 0.4 merus length, with 2 simple and 1 plumose seta; propodus 1.1 carpus length, with 2 pappose setae; dactylus 0.6 propodus length, with 3 simple setae; with exopod (Fig. 33 E).—*Pereopod* 1 basis 0.6 rest of article's length, with 2 plumose setae; ischium with 1 plumose seta; ischium to propodus with serrate margins; merus 3.3 ischium length, with 2 simple and 3 plumose setae; carpus 0.8 merus length, with 3 simple and 3 plumose setae; propodus 0.8 carpus length, with 2 simple and 3 plumose setae; dactylus 0.7 propodus length, with 6 simple setae; with exopod (Fig. 33 F).—*Pereopod* 2 basis 0.6 rest of article's length, with 1 simple and 2 plumose setae; merus 5 ischium length, with 2 simple setae; carpus 3 merus length, with 1 simple and 4 plumose setae; dactylus, 3 propodus length, with short digitiform tip, 9 simple setae and 1 terminal plumose seta; with exopod (Fig. 33 G).—*Pereopods* 3–5 with decreasing basis and increasing carpus length; pereopod 3 basis with 1 simple seta, plumose seta in pereopods 4 and 5; ischium and merus with 1 simple seta; carpus with 1 simple and 1 annulate seta; propodus with 1 annulate seta; dactylus with 1 annulate and 1 long simple terminal seta (Fig. 33 H–J).—*Uropod* peduncle 2 pleonite 6 length, 1.6 endopod length, with serrate margins; exopod 0.8 endopod length, with 2 simple setae and 1 terminal robust simple seta; endopod with 3 simple setae medially and 1 terminal robust seta longer than in endopod (Fig. 33 K).

**Remarks.** The new species is closely related to *C. triplicata* Hale, 1945 with similar ridges on carapace. *Campylaspis*

*sienkiewiczi* sp. nov. differs with: small eyeless ocular lobe versus a large one, with 3 lenses; pereopod 2 dactylus with digitiform tip, absent in Hale's species.

**Distribution.** Australia, widely distributed: NSW—northeast of Port Jackson, and Pittwater, at 5–888 m; and WA—North West Shelf, at 52 m depth.

### *Campylaspis similis* Hale, 1945

*Campylaspis similis* Hale, 1945: 186–187.—Stoddart & Lowry, 2003: 413.

**Material examined:** 1♂, P.65552.

**Distribution.** Australia: TAS (Hale, 1945); and now also from WA, at 44 m depth.

### *Campylaspis stanae* sp. nov.

Fig. 34

**Holotype** subadult ♀, 7.33 mm, P.88237, Australia, NSW, north-east of Eden, -37.00° 150.34°, 250–300 m, Waren dredge, shelly bryozoan sand, 11 Dec 1986, P.A. Hutchings, W.F. Ponder, R.T. Springthrepe, RV *Franklin*, FR1086-05, in AM. **Paratype** 1♀, P.64658.

**Etymology.** The species is dedicated to my colleague Dr Melanya Stan, specialist in Coleoptera Staphilinidae, as a sign of deep appreciation of her work.

**Diagnosis.** Carapace, 0.4 body length, 1 sulcus all around carapace; pereopod 2 basis 0.55 rest of article's length, dactylus 4.5 propodus length, with digitiform tip; uropodal peduncle 2.5 pleonite 6 length, 2.28 exopod length; equal rami.

**Description.** Carapace 0.4 rest of body length, 1.45 as long as high, with 1 sulcus all around carapace; large siphon; antennal notch scarcely marked; serrated anteroventral margin; small ocular lobe, without lenses; frontal lobe, small; pseudorostrum 0.25 body length (Fig. 34 A, B).—Antenna 1 peduncle article 1 as long as article 2, 0.66 rest of article's length; article 2 1.25 article 3 length; main flagellum broken, accessory one with 1 article (Fig. 34 C).—Maxilliped 2 basis fused with ischium, with 1 plumose seta; merus with 1 plumose seta; carpus 2.4 merus length, with 1 simple seta; propodus 2 carpus length, with 1 short spine and 2 simple setae.—Maxilliped 3 basis 1.06 rest of article's length, short serrated medially, 3 plumose and 2 pappose setae; basis to propodus with serrate margins; merus 3.7 ischium length, with 6 simple and 1 pappose seta; carpus 0.46 merus length, 3 simple and 1 pappose seta; propodus 1.06 carpus length, 3 pappose setae; dactylus 0.59 propodus length, with 3 simple setae, terminal seta 4 dactylus length; with exopod (Fig. 34 D).—Pereopod 1 basis 0.83 rest of article's length, 1 plumose seta on medial margin, with 1 simple and 1 plumose seta; ischium with 1 plumose seta; merus 1.5 ischium length, 3 simple and 5 plumose setae; carpus 0.9 merus length, with 6 simple and 2 plumose setae; propodus 0.9 carpus length, with 7 simple setae; dactylus 0.58 propodus length, with 7 simple setae; with exopod (Fig. 34 E).—Pereopod 2, basis 0.55 rest of article's length, 1 pappose seta on medial margin, 1 simple one on outer margin, merus 3.33 ischium length, 1 simple and 1 pappose on medial margin, 1 simple seta on outer margin, carpus twice as merus length, 2 pappose setae on medial margin, 2 pappose and 1

simple on outer margin, propodus 0.5 carpus length, dactylus 4.5 propodus length, 2 pappose setae and 3 simple ones on medial margin, 2 simple setulae and 1 plumose one on outer margin, tip of dactylus little downwardly bent; with exopod (Fig. 34 F).—Pereopod 3 basis 1.8 rest of article's length; ischium with 1 plumose seta; merus 1.2 ischium length, with 1 pappose seta; carpus 2.3 merus length; propodus 0.4 carpus length, with 2 annulate setae; dactylus fused with terminal robust long seta (Fig. 34 F).—Pereopod 4 basis 0.8 rest of article's length; ischium 0.17 with 1 plumose seta; merus 1.8 ischium length, with 1 plumose seta; carpus 1.66 merus length, 1 simple and 1 annulate setae; propodus 0.3 carpus length, with 1 annulate seta; dactylus as long as propodus, fused with terminal simple seta (Fig. 34 G).—Pereopod 5 basis 0.72 rest of article's length; ischium with 1 simple seta; merus 2.5 ischium length, with 1 simple seta; carpus 1.3 merus length; propodus 0.33 carpus length; dactylus as long as propodus, with 1 long simple seta (Fig. 34 H).—Uropod peduncle 2.5 pleonite 6 length, 2.28 exopod length; equal rami; exopod with 2 simple and 1 terminal microserrate seta; endopod with 2 simple and 5 microserrate setae (Fig. 34 I).

**Remarks.** *Campylaspis stanae* sp. nov. has a large circular sulcus as in *C. lowryi* sp. nov. and *C. radui* sp. nov. It differs from *C. lowryi* in having maxilliped 3 with a longer merus; *Campylaspis stanae* has a longer maxilliped 3 merus than *C. radui* sp. nov., with the pereopod 2 dactylus with a pedunculate tip vs. normal dactylus in *C. radui*; *C. stanae* has two simple and five microserrate setae vs. five simple setae in *C. radui*.

**Distribution.** Australia: NSW—east of Newcastle, and northeast of Eden, at 250–2698 m depth.

### *Campylaspis tasmaniensis* Petrescu, 2006

*Campylaspis tasmaniensis* Petrescu, 2006: 153, figs 37–39.

**Material examined:** 1♀, P.64734.

**Distribution.** Australia: NSW and TAS—off the Freycinet Peninsula, at 800–869 m (Petrescu, 2006). Now recorded from NSW—east of Terrigal, at 869 m depth.

### *Campylaspis thetidis* Hale, 1945

*Campylaspis thetidis* Hale, 1945: 212, figs 47, 48.—Stoddart & Lowry, 2003: 413.

**Material examined:** 1♀, P.88214; 2♀♀, P.88215; 1♀, MGAB CUM 1652; 1♀, P.64702; 1♀, P.64703; 1♀, P.64706; 3♀♀, 1 subadult ♂, P.65345; 1♀, P.65349.

**Distribution.** Australia: NSW, at 75–209 m (Petrescu, 2006); and now known from 48–220 m (Petrescu, 2018). Now also known from VIC—Gabo Island and Point Hicks, from 100–210 m depth.

### *Campylaspis thompsoni* Hale, 1945

*Campylaspis thompsoni* Hale, 1945: 183, figs 24, 25.—Stoddart & Lowry, 2003: 413.

**Material examined:** 1♀, P.50301; 1♀, P.88200; 1♀, P.64578; 1♀, P.64622; 1♂, P.64698; 1♀, P.64732; 1♀, P.88199; 2♀♀, 1♂, P.64740; 1♀, P.88201; 2♀, P.64751; 1♂, P.64755; 1♀, P.65039; 1♀, P.65044.

**Distribution.** Australia: QLD—Flynn Reef, Osprey Island, 3–1000 m; NSW—Bate Bay, Broken Bay, Little Island, Long Reef Point, Newcastle, Twofold Bay, Wattamolla, at 19–1200 m; VIC—Bass Strait, 84–85 m; WA—North West Shelf, 43 m; and Tasman Sea—Lord Howe Rise, at 1550 m depth.

### *Campylaspis trisulcata* Petrescu, 2006

*Campylaspis trisulcata* Petrescu, 2006: 155–156, figs 40, 41.

**Material examined:** 2♀♀, P.65350.

**Distribution.** Australia: TAS, 14–800 m (Petrescu, 2006). Reported here from NSW—Jervis Bay, at 14 m depth.

### *Campylaspis udrescui* sp. nov.

Fig. 35

**Holotype** ♀, 7.08 mm, P.88210, Australia, NSW, east of Newcastle, -33.06° 152.81°, 2632–2698 m, Menzies trawl, 8 Oct 1982, R.T. Springthorpe, W.F. Ponder, RV *Tangaroa*, U216, in AM.

**Etymology.** The species is dedicated to the memory of my colleague Aurel Udrescu (1955–2006), a brilliant specialist in Mysidacea, with a quick and fulminating activity at the “Grigore Antipa” Museum, as a sign of posthumous gratitude for all his contributions to the study of our museum’s collection and beyond.

**Diagnosis.** Carapace 0.45 body length, 2 lateral sulci bordered by 3 ridges meeting posteriorly part; maxilliped 2 propodus with 1 seta medially longer than dactylar teeth; pereopod 2 dactylus 3.8 propodus length, with long digitiform tip; uropodal peduncle 2.1 pleonite 6 length, 1.9 exopod length, exopod 1.05 endopod length; endopod with 3 microserrate setae medially.

**Description.** Carapace 0.45 entire body length, 2.2 as long as high, 2 lateral sulci bordered by 3 ridges meeting posteriorly; 1 pair of tubercles on basis of frontal lobe; ocular lobe without lenses; pseudorostral lobes 0.28 entire carapace length; smooth integument; antennal notch almost absent (Fig. 35 A,B). —Antenna 1 peduncle article 1 0.6 rest of article’s length; article 2 1.5 article 3 length; main flagellum, with 3 articles, 1.4 article 3 length; accessory flagellum with 1 article; aesthetascs as long as main flagellum (Fig. 35 C). —Maxilliped 2 basis fused with ischium, with 1 plumose seta; merus with 1 plumose seta; carpus as long as merus length, with 2 simple setae; propodus 1.5 carpus length, with 1 tooth and 1 seta; dactylus produced as 3 teeth, central tooth shortest (Fig. 35 D). —Maxilliped 3 basis 0.8 maxilliped length, with 1 simple and 3 plumose setae; basis to propodus with serrate margins; ischium with 1 medial tooth; merus 3.3 ischium length, with 1 simple and 5 plumose setae; carpus 0.4 merus length, with 1 plumose and 8 simple setae; propodus 1.4 carpus length; dactylus 1.5 propodus length; with exopod (Fig. 35 E). —Pereopod 1 basis 0.47 entire pereopod length, basis to propodus with serrate margins, with 2 plumose setae; ischium with 1 plumose seta; merus, 2.4 ischium length, with 5 simple and 3 plumose setae; carpus 1.6 propodus length, with 5 simple and 4 plumose setae; propodus 1.6 dactylus length, with 3 simple and 2 plumose setae; dactylus 0.7 propodus length, with 7 simple setae;

with exopod (Fig. 35 F). —Pereopod 2 basis 0.45 pereopod length; merus with 3 simple setae, carpus 1.6 merus length, with 2 distal medial simple setae, dactylus 3.8 propodus, almost equal with merus, carpus and propodus combined, with long digitiform tip, terminal short simple setae; with exopod (Fig. 35 G). —Pereopods 3–5 with serrate margins, progressively shorter basis, longer than rest of pereopod in 3rd pair, 2 annulate setae, dactylus fused with terminal simple long seta (Fig. 35 H–J). —Uropod peduncle 2.1 pleonite 6 length, 1.9 exopod length, serrate margins with simple setae, exopod little longer than endopod, with 5 setae on margins, long terminal microserrate seta, endopod with 3 microserrate setae on medial margin and terminal much stronger and longer one (Fig. 35 K).

**Remarks.** *Campylaspis udrescui* sp. nov. is closer to *C. triplicata* Hale, *C. pileus* Foxon, *C. roccatagliatai* sp. nov., *C. sienkiewiczi* sp. nov., with 2 lateral depressions on carapace bordered with ridges, all of them from Australian waters. *Campylaspis udrescui* differs from *C. triplicata* in the ocular lobe without lenses vs. ocular lobe with lenses in *C. triplicata*; from *C. pileus* with short pseudorostrum vs. long pseudorostrum; and from *C. roccatagliatai* and *C. sienkiewiczi* sp. nov. in having a slender maxilliped 3 merus vs. large maxilliped 3 merus. *Campylaspis udrescui* further differs from *C. roccatagliatai* in more slender pereopods 3–5 and longer uropods.

**Distribution.** Australia: NSW—east of Newcastle, 2698 m depth.

### *Campylaspis uniplicata* Hale, 1945

*Campylaspis uniplicata* Hale, 1945: 189, figs 29, 30.—Stoddart & Lowry, 2003: 413.

**Material examined:** 1♀, P.88209; 1♀, P.64650; 1♀, P.88202; 3♀♀, 1♂, P.88206; 2♀♀, 1♂, P.64655; 1♀, P.64700; 3♀♀, P.64701; 1♂, P.64718; 1♀, P.64733; 1♀, P.88203; 1♀, P.88205; 1♀, P.88204; 1♀, P.88208; 4♀♀, 1♂, P.88207; 1♂, P.65341; 1♀, P.65543; 1♀, MGAB CUM 1665.

**Distribution.** Australia: NSW—east of Port Hacking, and TAS, 100–800 m depth (Petrescu, 2006). *Campylaspis uniplicata* is recorded here from NSW—Botany Bay, Bermagui, Broken Bay, Long Reef Point, and Port Jackson, and off Eden, at 7–1115 m depth; NT—New Year Island, at 20 m; QLD—Lady Elliot Island, at 150 m; and VIC—Bass Strait, Point Hicks, at 119–125 m depth (Petrescu, 2018).

### *Campylaspis unisulcata* Hale, 1945

*Campylaspis unisulcata* Hale, 1945: 187, figs 27, 28.—Stoddart & Lowry, 2003: 413.

**Material examined:** 1♂, P.88217; 1♀, P.64731; 1♂, P.65048; 1♀, P.65556.

**Distribution.** Australia: NSW—east of Port Hacking; TAS, 100–800 m depth (Petrescu, 2006). The four specimens examined expand the known range to include WA—North West Shelf, at 52–54 m; and New South Wales—northeast of Coffs Harbour, and Bass Point, at 65–1000 m depth (Petrescu, 2018).

*Campylaspis vasilescui* sp. nov.

Fig. 36

**Holotype** ♂, 2.77 mm, P.88259, Australia, WA, Cape Range National Park, inshore limestone reef off Ned's Camp, -21.98° 113.92°, 1.5 m, sponge covered with epiphytic algae, muddy worm tubes, sediment, 2 Jan 1984, R.T. Springthorpe, WA 364, in AM.

**Etymology.** The species is dedicated in honour of George Vasilescu, neurophysician, in eternal gratitude for all he did to save my life in 2005.

**Diagnosis.** Carapace, 0.56 total body length, lateral sulcus almost entire carapace length; maxilliped 3 merus 3.9 ischium length; pereopod 2 dactylus 3.2 propodus length, robust short terminal; uropodal peduncle 1.43 pleonite 6, 1.7 endopod length; exopod 0.92 endopod length; endopod with 2 simple setae and 1 sensory subterminal seta medially.

**Description.** *Carapace*, 0.56 body length, 1.97 as long as high, 1.59 as long as wide, lateral sulcus almost entire carapace length; large frontal lobe with large eye lobe without lenses, toothed anterior margin of pseudorostrum; smooth integument; small antennal notch; pseudorostrum 0.4 carapace length (Fig. 36 A, B). —*Antenna 1* with robust peduncle, article 1 0.3 rest of article's length; article 2 0.9 article 1 length; article 3 as long as article 1; short sensory seta on outer margin of middle article; main flagellum 1.45 article 3 length; accessory flagellum with 1 article; aesthetascs 0.6 main flagellum length (Fig. 36 C). —*Maxilliped 3*, robust articles, basis 0.73 rest of article's length, with 4 plumose setae; margin, merus 3.9 ischium length, with 1 pappose and 5 simple setae, merus to propodus with serrate margins; carpus 0.28 merus length, with 1 pappose seta; propodus 1.27 carpus length, with 1 plumose and 3 pappose setae; dactylus 0.28 propodus length, with 2 simple setae; with exopod (Fig. 36 D). —*Pereopod 1* basis 0.73 rest of article's length, with 2 pappose setae; ischium with 1 pappose seta; merus 3.14 ischium length, with 2 simple and 2 pappose setae; carpus 0.65 merus length, with 1 simple, 1 plumose and 3 pappose setae; propodus 0.8 carpus length, with 2 simple and 3 pappose setae; dactylus 0.66 propodus length, with 4 simple setae; with exopod (Fig. 36 E). —*Pereopod 2* basis 0.47 rest of article's length, with 1 plumose seta; merus 4 ischium length, with 1 simple and 1 plumose seta; carpus 1.45 merus length, with 1 plumose, 1 simple and 2 pappose setae; dactylus 3.2 propodus length, with 7 simple setae and terminal 1 simple short and 1 simple, 0.68 dactylus length; with exopod (Fig. 36 F). —*Pereopod 3*, basis 1.06 rest of article's length, basis with serrate margins, with 1 simple and

1 plumose seta; ischium with 2 simple setae; merus 3 ischium length, with 2 simple setae; carpus 1.3 carpus length, with 1 simple short seta and hyaline fringe; propodus 0.29 carpus length, with 1 simple seta; dactylus 0.6 propodus length, 1 simple and 1 robust terminal seta; with exopod (Fig. 36 G). —*Pereopod 4* basis 0.83 rest of article's length, with 2 simple setae; merus 2.2 ischium length, with 1 simple seta; carpus 1.45 merus length, with 2 simple setae; propodus 3.2 carpus length, with 1 simple seta; dactylus 0.7 propodus length, with 1 simple seta; with exopod (Fig. 36 H). —*Pereopod 5* basis 0.48 rest of article's length; ischium with 1 simple seta; merus 2.6 ischium length, with 1 simple seta; carpus with serrate margins, as long as ischium and merus length, with 1 annulate seta; propodus 0.4 carpus length, with 1 annulate seta; dactylus fused with terminal short robust seta (Fig. 36 I). —*Uropod* peduncle 1.43 pleonite 6, serrate margins, 1.72 endopod length, with 6 simple setae; exopod 0.9 endopod length, with 7 simple setae, terminal robust seta 0.88 exopod length; endopod with serrate margins, 2 short simple and 1 sensory robust subterminal seta medially and 1 terminal robust sensory seta, 0.44 endopod length (Fig. 36 J).

**Remarks.** The new species *Campylaspis vasilescui* resembles other species, *C. johnstoni* Hale, 1937, *C. edenensis* Petrescu, 2006, *C. hangiuiae* sp. nov. and *C. oneai* sp. nov.

**Distribution.** Australia: WA—Cape Range National Park, at 1.5 m depth.

*Campylaspis wardi* Băcescu, 1992

Figs 37, 38

*Campylaspis wardi* Băcescu, 1992: 316–318. Stoddart & Lowry, 2003: 413.

**Material examined:** 2♀♀, P.63960; 1 subadult ♂, P.63961; 2♀♀, P.88219; 2♀♀, P.88218; 1 subadult ♂, P.64565; 1♀, P.88220; 1♀, P.65550; 1♀, 1♂, P.65551; 2♀♀, P.65555; 1♀, MGAB CUM 1666; 1♀, P.65558; 4♀♀, P.65560.

**Description of female.** *Body length* 5–5.20 mm. —*Carapace*, 0.66 body length, 2 as long as high, 1.5 as long as wide, mid-dorsal ridge, with numerous tubercles; lateral sulcus, other 2 parallel lateral ridges; short pseudorostrum 0.22 carapace length, massive anteroventral corner, smooth ventral margin (Fig. 37 A, B). —*Maxilliped 2* with 1 pappose seta on medial margin, 1 simple one on outer margin, merus 1.1 ischium length, long pappose seta longer than dactylus, carpus twice merus length, 1 bunch of setulae on outer margin, 2 simple setae and 1 strong tooth on medial margin, propodus little longer than carpus, setulae on outer margin, strong robust

**Table 3.** Morphological characters of *Campylaspis vasilescui* sp. nov. common with other species.

Species	Crp with ornamentation	Crp with sulcus with transverse ridge	Mxp 3 large merus	P 2 dactylus with digitiform tip	Urp serrate endopod	Urp endopod medial setae
<i>C. vasilescui</i>	—	—	+	—	+	3
<i>C. johnstoni</i>	—	—	—	—	—	6
<i>C. edenensis</i>	numerous dorsal clear lenses	+	—	+	+	5
<i>C. hangiuiae</i>	—	+	+	+	+	3
<i>C. oneai</i>	—	+	—	—	+	5

seta little longer than dactylus, 1 median simple seta, dactylus fused with terminal strong short 3 setae (Fig. 37 C). — *Maxilliped 3*, basis 0.84 length of remaining articles, serrate medial margin, 1 pappose seta on medial margin, 2 outer longer ones, merus 6 ischium length, twice as carpus length, toothed margins, 1 simple seta on medial margin, 1 pappose on outer margin, carpus 1.33 propodus length, toothed margins, 2 simple and 1 pappose seta on medial margin, 1 pappose seta on outer margin, propodus 1.5 dactylus length, 2 pappose setae on medial margin, dactylus with 2 long terminal simple setae; with fully developed exopod (Fig. 37 D). — *Pereopod 1* basis 0.69 length of remaining articles, serrate and setulate medial margin, 1 plumose seta on medial margin, merus 2.8 ischium length, toothed medial margin of ischium to propodus, serrate outer margin of ischium to carpus, 1 simple seta on medial margin of ischium, 2 setulae on medial margin of merus, 1 simple one on outer margin, carpus little shorter than merus, 2 simple setae on medial margin, 2 pappose ones on outer margin, propodus 0.71 carpus length, 1 simple seta on medial margin, 3 pappose setae on outer margin, dactylus half propodus length, 4 short simple terminal setae; with fully developed exopod (Fig. 37 E). — *Pereopod 2* with massive articles, basis 0.56 length of remaining articles, merus 6 ischium length, serrate margins, carpus 1.75 merus length, 4 setulae and large teeth on outer margin, 1 setule and 1 short pappose seta on outer margin, dactylus 3 propodus length, with large basis, strongly serrate margins, curved tip, strong short simple terminal seta; with developed exopod (Fig. 37 F, G). — *Pereopod 3* basis 1.3 length of remaining articles, merus 1.5 ischium length, robust merus and carpus, carpus 1.33 merus length, 1 annulate seta on propodus, serrate medial margin of carpus and propodus, dactylus fused with short robust terminal seta (Fig. 37 H). — *Pereopod 4* basis half length of pereopod, 1 simple seta on medial margin of ischium and merus, carpus 1.15 merus length, propodus 0.33 carpus length (Fig. 8 I). *Pereopod 5*, basis 0.92 rest of article's length, merus as long as carpus (Fig. 8 J). — *Uropod* peduncle 1.25 pleonite 6 length, robust, strongly serrate on medial margin, 1.9 endopod length, exopod as long as endopod, robust, serrate margins, terminal short robust seta on both rami (Fig. 37 K, L).

**Description of adult male.** *Body length* 2 mm. — *Carapace* 2.2 as long as high, 1.56 as long as wide, smooth integument, lateral sulcus 0.66 carapace total length, short pseudorostrum, eyelobe with 3 small lenses, smooth ventral margin (Fig. 38 A, B). — *Antenna 1* peduncle article 1 0.5 rest of article's length; article 2 1.25 article 3 length; main flagellum 1.1 article 3 length; accessory flagellum with 1 article; aesthetascs 1.75 main flagellum length (Fig. 38 C). — *Maxilliped 3* basis 0.92 length of remaining articles, 2 short plumose setae on medial margin, other, much longer, on outer margin, merus 4 ischium length, 1 medial plumose seta on ischium, 1 plumose seta on outer margin of merus, carpus 0.66 merus length, 1 outer plumose seta, propodus 0.56 carpus length, 2 pappose setae on medial margin, dactylus 0.66 propodus length, 3 terminal setae little longer than dactylus; with fully developed exopod (Fig. 38 D). — *Pereopod 1* basis 0.77 length of remaining articles, 3 plumose setae on medial margin, merus 2.5 ischium length, 1 plumose seta on medial margin of ischium, 2 simple seta on medial margin of merus, 1 simple and 2 plumose setae

on outer margin, carpus little shorter than merus, 2 simple setae on medial margin, 1 plumose seta on outer margin, propodus 0.79 carpus length, 1 short pappose medial seta, 3 plumose outer ones, dactylus 0.53 propodus length, 5 short simple terminal and subterminal setae; fully developed exopod (Fig. 38 E). — *Pereopod 2* basis 0.57 rest of article's length; merus 8 ischium length; carpus 1.9 merus length, with 3 plumose and 2 simple setae; dactylus 3 propodus length, with 11 setae, constricted in terminal part; with exopod (Fig. 38 F). — *Pereopod 3* basis 1.25 rest of article's length, with 1 plumose seta; merus 2.2 ischium length, 1 simple medial seta on ischium, 2 setulae on medial margin of merus, merus as long as carpus, 1 setule on outer margin, propodus half of carpus, very small dactylus with short robust terminal seta; with exopod (Fig. 38 G). — *Pereopod 4* basis 1.46 length of remaining articles, merus 1.33 ischium length, 1 setule on medial margin, carpus 1.25 merus length, propodus half of carpus, 1 annulate medial seta on propodus, dactylus 0.4 propodus length; with exopods (Fig. 38 H). — *Pereopod 5* basis 0.64 length of remaining articles, merus twice as ischium length, 1 setule on medial margin of ischium and merus, carpus little shorter than merus, propodus little shorter than carpus, 1 annulate seta and short dactylus fused with terminal robust seta (Fig. 38 I). — *Uropod* peduncle 1.46 last pleonite length, serrate margins, 4 simple and 12 microserrate setae on medial margin, 2.08 endopod length, exopod little shorter than endopod, short terminal robust seta with oval structures, 1 plumose seta on medial margin, endopod with 10 microserrate setae on medial margin, short robust terminal seta with same characteristic oval structures (Fig. 38 J).

**Remarks.** The species, previously known from North West Shelf (Băcescu, 1992), is collected now from the same area, from 42 m depth.

**Distribution.** Australia: WA—North West Shelf, at 1.5–54 m depth.

### *Campylaspis wilsoni* sp. nov.

Fig. 39

**Holotype** subadult ♀, 2.75 mm, P.64693, Australia, NSW, Jervis Bay, Moona Moona Creek, -35.05° 150.69°, 28 Jan 1983, in AM. **Paratypes:** 1♀ P.88274; 1♀ (dissected) [same data as P.88274] MGAB CUM 1648; 1♀, P.64573; 1♀, P.88617; 1♀, P.88273; 2♀♀, P.88275.

**Etymology.** The species is named in honour of Dr Buz Wilson, retired Principal Research Scientist at the Australian Museum, as a sign of gratitude for the help and advice that I received from him during my work at the museum.

**Diagnosis.** Carapace 0.45 body length, ocular lobe with 3 large lenses; maxilliped 2 dactylus with terminal teeth shorter than propodal seta; maxilliped 3 carpus longer than merus; pereopods with large articles; pereopod 2 dactylus with terminal seta; uropodal peduncle 1.48 6 pleonite length, 2.3 endopod length, endopod 1.1 exopod length, endopod with 3 short medial stout setae.

**Description.** Carapace 0.45 entire body length, with 2 lateral ridges delimiting 2 sulci, 1 transverse ridge on upper sulcus, on anterior 1/3 of carapace; small antennal notch; ocular lobe

with 3 large lenses (Fig. 39 A, B).—*Antenna 1* peduncle with short, robust articles, article 1 0.7 rest of article's length, with 2 simple setae; article 2 1.25 article 3 length; main flagellum 3-articulate, aesthetases 2.7 main flagellum length, accessory flagellum minute, uniarticulate (Fig. 39 C).—*Maxilliped 2* basis 0.6 entire maxilliped length, fused with ischium, with short plumose seta on distal medial corner; carpus 1.6 merus length, with 2 simple setae; propodus 2.9 carpus length, longer than distal lateral strong seta; dactylus with 3 teeth shorter than propodal seta (Fig. 39 D).—*Maxilliped 3* basis 0.5 rest of article's length, with 3 plumose setae on medial distal corner, 2 much longer on lateral distal corner; large merus, with serrate margins, as long as basis; carpus, little shorter than propodus; propodus with serrate margins; short dactylus, 0.4 as long as propodus, with terminal simple setae (Fig. 39 E).—*Pereopod 1* basis 0.53 rest of articles combined length; large articles; basis to propodus with numerous plumose setae on both margins; merus, 2nd longest article, 1.25 carpus length; carpus as long as propodus; propodus 2 dactylus length; dactylus with terminal simple setae (Fig. 39 F).—*Pereopod 2* basis 0.4 as long as entire length of pereopod, numerous plumose setae on both margins of basis to carpus; merus 7.5 ischium length; carpus 2.5 propodus length; dactylus 3 propodus length, without tapering tip, numerous short simple setae on both margins (Fig. 39 G).—*Pereopods 3–5* with decreasing basis; increasing carpus in pairs 3 and 4, shorter in pair 5; dactylus with terminal long robust seta (Fig. 39 H–J).—*Uropod* with serrate margins, large peduncle, 1.48 pleonite 6 length, 2.3 endopod length, exopod/endopod: 0.85, exopod with 1 outer subterminal seta and 1 short terminal seta, endopod with 3 short medial setae and 1 short robust terminal seta (Fig. 39 K).

#### Key to species of *Cumella* from Australian waters

1	Eyelobe reaching end of pseudorostral lobes	2
—	Eyelobe not reaching end of pseudorostral lobes	subgenus <i>Cyclaspocumella</i> Watling, 1991 ..... 7
2	Eyelobe with or without lenses, in male without lenses on pseudorostrum	subgenus <i>Cumella</i> Sars, 1865 ..... 3
—	Eyelobe with lenses, in male, lenses also on pseudorostrum	subgenus <i>Cumewingia</i> Băcescu, 1971 ..... 5
3	Uropodal peduncle shorter than pleonite 6	<i>C. michaelseni</i> Zimmer, 1914
—	Uropodal peduncle longer than pleonite 6	4
4	Uropodal endopod with 6 setae on inner margin in female	<i>Cumella similis</i> Fage, 1945 <sup>1</sup>
—	Uropodal endopod with 3 setae on inner margin in female	<i>C. cana</i> Hale, 1945
5	Uropodal peduncle longer than pleonite 6	<i>C. indosinica</i> Zimmer, 1952
—	Uropodal peduncle equal of shorter than pleonite 6	6

<sup>1</sup> Hale (1949) found no differences between *Cumella munroi* Hale, 1945 and *Cumella similis* Fage, 1945. *Cumella munroi* is a junior synonym of *Cumella similis* and is mentioned from Australian waters (see also Băcescu, 1992, *Crustaceorum catalogus*, 8, p. 226).

**Remarks.** This species is similar to *C. triplicata* Hale, 1945, but differs mainly by having two instead of three lateral ridges delimiting depressions.

**Distribution.** Coral Sea: Portlock Reef, at 20 m; Australia: NSW—Jervis Bay, and northeast of Eden, at 250–300 m; NT—New Year Island, at 20 m; and WA—North West Shelf, at 41–43 m depth.

#### *Campylaspis* sp.

**Material examined:** 1♀, P.65330; 1♀, P.65337.

**Remarks.** Broken specimens, indeterminate.

#### Genus *Cumella* Sars, 1865

**Diagnosis.** Carapace shorter than 0.4 body length, anteroventral corner not prominent, ocular lobe mid-dorsal with or without lenses, reaching or not pseudorostrum extremity; pseudorostral lobes could present supplementary lenses in male; Antenna 1 peduncle 2nd article without process; female with 3 exopods, male with 5 exopods; uropod peduncle longer or as long as pleonite 6.

**Remarks.** Three subgenera and seven species were previously known. With two other species now added, a total of nine species are now recorded from Australia; five species from two subgenera are present in the Australian Museum collection.

6	Uropodal peduncle as long as pleonite 6 .....	<i>C. turgidula</i> Hale, 1945
—	Uropodal peduncle shorter than pleonite 6 .....	<i>C. hispida</i> Calman, 1911
7	Carapace with a marked dorsal projection at posterior end .....	<i>C. gibba</i> Zimmer, 1914
—	Carapace without projection at posterior end .....	8
8	Carapace with a dorsal carina, eyeless .....	<i>C. cyclospoides</i> Zimmer, 1914
—	Carapace without dorsal carina, dorsoventral ridge, with eyes	<i>C. bunakenensis</i> Petrescu, 1995

### Subgenus *Cumella* Sars, 1865

**Diagnosis.** Ocular lobe with or without lenses, short, not reaching extremity of pseudorostrum lobes.

#### *Cumella (Cumella) bunakenensis* Petrescu, 1995

*Cumella bunakenensis* Petrescu, 1995: 39–41.

**Material examined:** 1♀, P.64723; 2♀♀, P.88250.

**Distribution.** Known from the Indonesian type locality—Bunaken Island (Petrescu, 1995). The species is now recorded from Australia: WA—West Wallabi Island and Beacon Island, at 1–8 m depth.

#### *Cumella (Cumella) cana* Hale, 1945

*Camella laeve*.—Hale, 1936: 20–21.

*Cumella cana* Hale, 1945: 432.—Hale, 1949: 239. Băcescu, 1992: 214. Watling, 1991: 752. Petrescu, 1997a: 115. Stoddart & Lowry, 2003: 414.

**Material examined:** 1♂, P.88169; 1♂, P.64583; 1♀, P.88162; 1♀, 1♂, P.88164; 1♂, P.88166; 1♀, P.88163; 1♂, P.88173; 1♀, P.88176; 1♀, P.64660; 1♀, P.64709; 1♀, P.64779; 5♀♀, 4♂♂, P.64782; 1♂, P.88165; 1♀, P.88161; 9♀♀, 4♂♂, P.88180; 1♂, P.64797; 2♂♂, P.64798; 4♂♂, P.88177; 1♂, P.88172; 1♀, P.64850; 1 specimen, P.88179; 1♀, P.64868; 1♂, P.64874; 2♀♀, 4♂♂, P.64877; 1♀, P.88170; 1♂, P.64879; 2♂♂, P.64881; 1♀, P.64882; 1♀, P.88174; 1♂, P.64886; 1♀, P.64892; 1♀, P.64894; 1♀, P.64895; 1♀, P.64899; 1♀, P.65066; 1♀, P.88178; 1♂, P.88167; 2♀♀, 2♂♂, P.65076; 3♂♂, P.88175; 2♀♀, 1♂, P.65304; 2♀♀, P.88171; 1♀, P.65323; 1♀, P.65327; 578♂♂, P.65333; 6♂♂, P.88168; 21♀♀, 40♂♂, P.65575; 8♀♀, 50♂♂, P.65584; 7♀♀, 1♂, P.65585; 4♀♀, 3♂♂, P.65586; 181♀♀, 41♂♂, P.65589; 3♀♀, P.65613; 3♀♀, 2♂♂, P.65614; 20♀♀, 5♂♂, P.65616; 2♀♀, P.66038; 2♂♂, P.66039; 3♂♂, P.66040; 12♀♀, 6♂♂, P.66041; 1♂, P.66043; 32♀♀, 15♂♂, P.66045; 1 subadult ♂, P.66046; 5♂♂, P.66047.

**Distribution.** Australia: SA and WA, 2–7 m depth (Hale, 1945); also found in Malaysia, 1–3 m (Petrescu, 1997a). Now reported from NT—Darwin Harbour, Goat Point, and McCluer, New Year and Oxley Islands, at 6–20 m; QLD—Port Clinton and Lizard, Thursday, and North Stradbroke Islands, at 3–21 m; NSW—Batemans Bay, Bannister Head, Pittwater, North Tollgate Island, at 2–18 m; SA—Kangaroo Island and Port Lincoln, at 6 m; and WA—Bush Bay, Bundegi Flats, Cape Range National Park, Dampier Archipelago, Denham, Mangrove Bay, Monkey Mia, and Rottnest Island, at 0–14 m depth (Petrescu, 2018).

### Subgenus *Cumewingia* Băcescu, 1971

**Diagnosis.** Male with suplementary lenses on pseudorostrum.

#### *Cumella (Cumewingia) hispida* Calman, 1911

*Cumella (Cumella) hispida* Calman, 1911: 341–344.—Zimmer, 1914: 179. Fage, 1945: 209. Hale, 1945: 176–177. Hale, 1949: 238. Zimmer, 1952: 28. Watling, 1991: 752. Băcescu, 1992: 219. Petrescu, 1997a: 126–129. Stoddart & Lowry, 2003: 414.

*Cumella (Cumewingia) hispida*.—Petrescu, 1997b: 115–117.

**Material examined:** 1♀, P.88181; 1♀, P.64581; 11♀♀, 2♂♂, P.88186; 2♀♀, P.64603; 11 specimens, P.64605; 4♀♀, 8♂♂, P.64613; 1♀, 1♂, P.64614; 1♀, P.64722; 1♀, P.64726; 1♀, P.64771; 1♀, P.64776; 1♀, P.64780; 7♀♀, 7♂♂, P.64787; 11♀♀, 6♂♂, P.88183; 1♂, P.88189; 13♀♀, 4♂♂, P.88185; 1♂, P.88188; 3♀♀, 3♂♂, P.64795; 2♀♀, P.88184; 2♀♀, 4♂♂, P.88192; 3♂♂, P.88191; 4♀♀, 1♂, P.64830; 3♀♀, P.64839; 2♀♀, P.64840; 1♀, P.88190; 2♀♀, 4♂♂, P.64846; 8♂♂, P.64855; 1♀, P.65059; 1♀, P.65060; 6♀♀, P.65061; 1♀, 1♂, P.65063; 1♀, P.88193; 1♂, P.88195; 1♀, P.65316; 1♀, P.65318; 1♀, P.65321; 1♀, 4♂♂, P.88187; 2♀♀, P.65351; 1♂, P.65353; 3♂♂, P.65357; 1 subadult ♂, P.65582; 1♂, P.65615; 4♀♀, P.66036.

**Distribution.** Australia: west and east coasts, 0–9 m; also, Vietnam, Gulf of Thailand (Băcescu, 1992) and Malaysia (Petrescu, 1997a); in the present work specimens are reported from NT—New Year and Oxley Islands, at 5–6 m; Coral Sea—Ashmore Reef, at 10–12 m; QLD—Dingo Beach, Moreton Bay and Lizard and North Stradbroke Islands, at 2–6 m; NSW—Port Jackson, at 12 m; SA—Port Lincoln, Yorke Peninsula, at 2 m; and WA—30 km south of Carnarvon, Cape Range National Park, Dampier Archipelago, Denham, Exmouth Gulf, Fremantle, Goss Passage, Mangrove Bay, and Rottnest Island, at 2–21 m depth (Petrescu, 2018).

#### *Cumella (Cumewingia) indosinica*

Zimmer, 1952

*Cumella indosinica* Zimmer, 1952: 21–23.—Băcescu, 1992: 219. Petrescu, 1997a: 129.

*Cumella (Cumewingia) indosinica*.—Watling, 1991: 752. Petrescu, 1997b: 117. Stoddart & Lowry, 2003: 413.

**Material examined:** 1♂, P.88240; 1♂, P.64623; 1♂, P.64763; 1♂, P.88241; 1♂, P.65355; 1♂, P.65577.

**Distribution.** Vietnam, Cambodia, 0–15 m, Indonesia and Malaysia (Petrescu, 1997a,b). Recorded for the first time from Australia: WA, NT and NSW, 1–18 m.

### Key to species of *Nannastacus* from Australian waters (present study)

#### Males

- 1 Uropod with peduncle at least twice as long as pleonite 6 ..... 2
- Uropod with peduncle less than twice as long as pleonite 6 ..... 3
- 2 Pleonite with two dorsal longitudinal rows of tubercles ..... *N. inconstans* Hale, 1945
- Pleonite without dorsal rows of tubercles ..... *N. subinflatus* Hale, 1945
- 3 Carapace more developed posteriorly, covering dorsally 3rd pereonite ..... *N. stebbingi deformis* Fage, 1945
- Carapace normally developed, not covering dorsally 3rd pereonite ..... 4
- 4 Dorsal spines or processes on 5th pereonite and pleonites ..... 5
- No dorsal spines or processes on pereon or pleon ..... 6
- 5 Dorsal pair of spines or processes on 5th pereonite and first 2 pleonites ..... *N. antipai* Petrescu, 1995
- First 4 pleonites with a pair of cylindrical dorsal processes, with apical spines ..... *N. hansenii* Calman, 1905
- 6 Harsh integument ..... 7
- Smooth integument ..... *N. johnstoni* Hale, 1945
- 7 Upturned pseudorostrum ..... 8
- Nonupturned pseudorostrum ..... *N. mitreai* Petrescu, 1995
- 8 Uropodal endopod more than twice as long as peduncle ..... 9
- Uropodal peduncle twice as long as peduncle ..... *N. wisseni* Petrescu, 1997
- 9 Uropodal endopod 2.2 longer than peduncle ..... *N. gibbosus* Calman, 1911
- Uropodal endopod 2.8 longer than peduncle ..... *N. inflatus* Hale, 1945

#### Females

- 1 Anteroventral corner prolonged in a process ..... 2
- Anteroventral corner not prolonged in a process ..... 9
- 2 Carapace with spines ..... 3
- Carapace without spines ..... 6
- 3 Carapace with mid-dorsal spine ..... 4
- Carapace with numerous short spines ..... *N. gamoi* Băcescu, 1992
- 4 Carapace with a dorsal unique, a lateral pair and a posterior spine ..... *N. papadopoli* sp. nov.
- Carapace with a dorsal unique spine, no lateral ones ..... 5
- 5 Uropodal peduncle 4 peduncle length ..... *N. antipai* Petrescu, 1995
- Uropodal peduncle 2.5 peduncle length ..... *N. wisseni* Petrescu, 1997
- 6 Carapace with short tubercles ..... 7
- Carapace without short tubercles ..... 8
- 7 Uropodal endopod 3 peduncle length ..... *N. inflatus* Hale, 1945
- Uropodal endopod 2.4 peduncle length ..... *N. inconstans* Hale, 1945
- 8 Uropodal endopod 3.9 peduncle length ..... *N. gibbosus* Calman, 1911
- Uropodal endopod 2 peduncle length ..... *N. nyctagineus* Gamô, 1962
- 9 Carapace with dorsal tubercles and spines ..... *N. mitreai* Petrescu, 1995
- Carapace without dorsal tubercles and spines ..... *N. johnstoni* Hale, 1945

## Genus *Nannastacus* Bate, 1865

**Diagnosis.** Carapace shorter than 0.4 body length, anteroventral corner prominent, ocular lobe divided; antenna 1 peduncle 2nd article with process; female with 3 exopods, male with 5 exopods; male uropod peduncle shorter or as long as pleonite 6.

**Remarks.** Five species were previously known from Australia. Another seven are added in present study, one of them new to science; a total of 12 species are now recorded in the Australian fauna.

### *Nannastacus antipai* Petrescu, 1995

*Nannastacus antipai* Petrescu, 1995: 41–44.—Petrescu, 1997b: 121–122.

**Material examined:** 13♀♀, 5♂♂, P.90645; 1♀, 8♂♂, P.90646; 1♀, P.65367.

**Distribution.** Indonesia, 3–7 m; and Malaysia (Petrescu, 1995, 1997b). The species is recorded for the first time from Australian waters: WA—Rottnest Island, at 1 m; NT—New Year Island, at 10–20 m depth (Petrescu, 2018).

### *Nannastacus gamoi* Băcescu, 1992

*Nannastacus spinosus* Gamô, 1962: 186–189.—Băcescu & Muradian, 1975: 1975: 35.

*Nannastacus gamoi* Băcescu, 1992: 235.—Petrescu, 1997a: 129–130.

Nec *Nannastacus spinosus* (Paulson, 1875).

**Material examined:** 1♀, P.90647; 1 subadult ♂, P.90648; 1♀, P.64617; 1♀, P.64621; 1♀, MGAB CUM 1672; 1♀, P.64835; 1♀, P.65324.

**Distribution.** Red Sea, Japan (Băcescu, 1992); Indonesia and Malaysia, 0–3 m (Petrescu, 1997a,b). This species reported here for the first time from Australia: NSW—Byron Bay, Port Stephens, Beacon Island, and Point Upright, at 2–18 m; and WA—Rottnest Island, at 3 m depth.

### *Nannastacus gibbosus* Calman, 1911

*Nannastacus gibbosus* Calman, 1911: 341.—Hale, 1936: 432. Gamô, 1963: 45. Băcescu, 1992: 236. Petrescu, 1997a: 131. Petrescu, 1997b: 123. Stoddart & Lowry, 2003: 415.

**Material examined:** 1♀, P.24249; 4♂♂, P.90847; 2♀♀, P.64582; 3♀♀, P.90839; 1♀, P.90976; 1♀, P.64593; 1♂, P.64596; 1♀, 2♂♂, MGAB CUM 1674; 1 manca, P.90841; 1♀, P.90837; 2♀♀, 1♂, P.90842; 1♀, 2♂♂, P.64608; 1♂, P.90844; 2♀♀, P.90835; 1♀, P.64619; 3♀♀, 1 manca, P.64626; 4♀♀, 1♂, P.64627; 1♀, P.64628; 1♀, 1♂, P.64629; 1♀, P.64630; 1♀, 1♂, P.64631; 1♂, P.64634; 2♀♀, P.64635; 4♀♀, 2♂♂, P.64637; 1♀, 1♂, P.64638; 1♀, P.64639; 1♀, P.64642; 2♀♀, P.64643; 2♀♀, 1, P.64645; 2♀♀, P.90836; 3♀♀, 1 subadult ♂, P.64695; 7♀♀, 4♂♂, P.64714; 3♀♀, 1♂, 3♀, P.64715; 1♀, P.64728; 1♀, P.64760; 5♀♀, 3♂♂, P.64762; 1♂, P.90843; 1♀, P.64764; 1♀, P.64766; 1♀, P.64769; 2♀♀, 1♂, P.64775; 1♂, 1♀, P.64778; 4♀♀, 2♂♂, P.64792; 30, P.64793; 6♀♀, 3♂♂, P.90854; 46♀♀, 23♂♂, P.64781; 1♀, 1?, P.64783; 1♀, 1♂, P.64784; 1♂, P.64786; 22, P.90855; 2♀♀, P.64794; 2, P.90857; 1♂, P.64796; 3♀♀, P.90846; 7♀♀, P.64800; 1♂, P.90974; 2♀♀, P.64831; 2♂♂, P.64832; 6♂♂, P.64836; 1♀, P.90859; 2, P.90856; 2♀♀, P.64841; 1♀, 1♂, P.64842; 1 subadult ♂,

P.90973; 3, P.90850; 7♀♀, 12♂♂, P.90849; 1♀, P.64847; 3♀♀, 8♂♂, P.90852; 1♀, P.64852; 1♂, P.64853; 2♂♂, P.90838; 1♀, 2♂♂, P.64856; 1♀, P.64857; 1♀, P.64858; 1♂, P.64859; 1♀, 1♂, P.64860; 3♀♀, 1♂, P.64864; 1♂, P.64865; 2♀♀, P.64866; 1♀, P.64867; 1♂, P.64869; 1♂, P.64870; 1♀, P.64871; 1♀, 1♂, P.64872; 1♀, P.64873; 1♀, P.64875; 11♀♀, 1♂, P.64876; 2♂♂, P.64878; 1♀, P.64880; 1♂, P.64884; 3♀♀, 1♂, P.64996; 1♀, P.64997; 15, P.64998; 8♀♀, 8♂♂, P.64999; 1♂, P.65000; 5♀♀, 2♂♂, P.65002; 2♂♂, 2 juv, P.65003; 3, P.65004; 2♀♀, 9♂♂, P.65005; 4♀♀, 2♂♂, P.65006; 2♀♀, 4♂♂, P.65007; 6♀♀, 3♂♂, P.65010; 2♀♀, 2♂♂, P.65011; 6 subadult ♂♂, P.65012; 1 subadult ♂, P.65013; 2♀♀, 1♂, P.65014; 1♂, P.65015; 1♀, 1♂, P.65016; 6♀♀, P.65017; 3♀♀, 5♂♂, P.65018; 3♀♀, 2♂♂, P.65019; 1♀, 1♂, P.65020; 2♀♀, P.65021; 2, P.65022; 1♀, P.65024; 1♂, P.65026; 1♂, P.65028; 1♂, P.65029; 1♀, P.65030; 4♀♀, 3♂♂, P.65031; 2♀♀, P.65032; 1♀, 1♂, P.65033; 4♀♀, 1♂, P.65034; 2♀♀, 1 subadult ♂, P.65035; 1♀, P.65036; 1♀, P.90845; 3♀♀, 1♂, P.65062; 15♀♀, 1♂, P.65067; 10♀♀, P.65068; 1♀, P.65071; 1♂, P.65072; 4♀♀, 2♂♂, P.65073; 2♀♀, P.65074; 4, P.90833; 2♂♂, P.65080; 1♀, P.65081; 4♂♂, P.65082; 1♀, P.65085; 1♀, P.65086; 2♀♀, P.65088; 1♂, P.65092; 1♂, P.65096; 1♂, P.65097; 1♀, P.65098; 2♀♀, P.65100; 1♂, P.65296; 1♀, P.65297; 1♀, P.65298; 1♀, 1♂, P.65309; 4♀♀, 4♂♂, P.65310; 2♂♂, P.65311; 1♀, 4♂♂, P.65313; 1♀, P.65314; 2♀♀, 1♂, P.65315; 5♀♀, 1♂, 2 juv, P.90685; 1♀, P.90840; 3, P.65319; 1♀, 1♂, P.65320; 3♀♀, P.90848; 1♂, P.65331; 3, P.65332; 5♂♂, P.90858; 12♀♀, 153♂♂, P.90834; 1♀, P.65348; 1♀, P.90972; 1♀, P.65361; 1♂, P.65362; 1♀, P.65364; 1♂, P.65365; 2, P.90851; 3, P.65372; 1♀, 1 subadult ♂, P.65378; 1♂, P.65379; 1♂, P.65381; 1♀, P.65382; 1♂, P.65384; 1♀, P.65604; 1♂, P.90853; 1♂, P.65611; 1♀, P.65612; 1♀, P.65618; 2♀♀, P.65619.

**Distribution.** Probably the most common species of the genus from Indian and Western Pacific Oceans, and southern Australia, 0–9 m (Băcescu, 1992; Hale, 1936; Stoddart & Lowry, 2003). The species is present all around Australia, with the majority of samples studied from WA, NSW, and QLD, 0–27 m (Petrescu, 2018).

### *Nannastacus hansenii* Calman, 1905

*Nannastacus hansenii* Calman, 1905: 11.—Hale, 1936: 431–432. Băcescu, 1992: 237. Petrescu, 1997a: 131. Stoddart & Lowry, 2003: 415.

**Material examined:** 1♂, P.65078; 1♂, P.65356.

**Distribution.** Indonesia and Australia, 0–2 m (Băcescu, 1992; Petrescu, 1997a). Known now from QLD—Lizard Island, and WA—Cape Range National Park.

### *Nannastacus inconstans* Hale, 1945

Fig. 40

*Nannastacus inconstans* Hale, 1945: 150. Hale, 1953: 73. Petrescu, 1997a: 137. Petrescu, 1997b: 127. Petrescu, 2001b: 107. Petrescu, 2003: 104. Stoddart & Lowry, 2003: 416.

**Material examined:** 2♂♂, P.90687; 1♂, P.64590; 22♀♀, 5♂♂, P.90689; 8♀♀, P.64592; 2♂♂, P.90682; 3, P.90684; 1♀, P.64618; 2♀♀, P.64620; 1♀, P.90686; 1♂, P.90679; 14♀♀, 3♂♂, P.64791; 2♀♀, P.90678; 2♀♀, P.90683; 1♀, P.64838; 1♂, P.64844; 1♀, 3♂♂, P.64845; 1♀, P.64848; 1♀, P.65009; 1♀, P.90688; 2♀♀, 1 subadult ♂, P.65300; 4♀♀

(1 fully diss.), 1♂, P.65301; 1♀, P.65302; 3♀♀, P.65306; 1♀, P.65322; 2♀♀, P.65352; 2♀♀, P.65363; 4♀♀, 3♂♂, P.65595; 1♀, P.65597; 1♀, 1♂, MGAB CUM 1673; 4♀♀, 2♂♂, P.65093.

**Description.** Female, cristate form according to Hale description (1945). Body: 1.6 mm.—*Carapace* with numerous small, distally dilated granules, closely beset, 0.4 entire body length, 1.7 as long as high, seen from above it is widest across the branchial regions which are more inflated; small elevation on basis of frontal lobe; anterolateral margin with 1 toothed process, with serrate margins; anterolateral margin anteriorly serrate; pseudorostral lobes upturned, coarsely serrate, 0.3 carapace length (Fig. 40 A, B).—*Pereon and pleon* with 1 double dorsal row of denticles and 1 lateral row.—*Antenna 1* peduncle article 1 1.3 rest of article's length, with 3 simple setae; article 2 with 2 simple setae and 1 process, 1.3 article 3 length; main flagellum 0.8 article 3; accessory flagellum with 1 article; aesthetascs 2.5 main flagellum length (Fig. 40 C).—*Maxilliped 1* basis with 2 simple, 4 plumose and 2 hook setae; carpus 1.25 merus length, with 6 comb-like setae medially; propodus 1.6 carpus length, with 3 simple and 1 plumose seta; dactylus as long as propodus, with 2 simple setae (Fig. 40 D).—*Maxilliped 2* basis with 1 simple plumose seta; merus 1.6 ischium length, with 1 plumose seta; carpus 0.8 merus length, with 3 pappose setae; large propodus, 0.9 carpus length, with 1 plumose, 3 simple and 2 pectinate setae; dactylus with 1 strong terminal seta (Fig. 40 E).—*Maxilliped 3* basis 0.7 rest of article's length process, long process, with 4 plumose setae; merus 2.2 ischium length, with 1 simple and 1 plumose seta; carpus 1.25 merus length, as long as propodus, with 2 simple setae; propodus 0.9 carpus length, with 1 simple and 3 pappose setae; dactylus 0.6 propodus length, with 2 simple and 2 pectinate setae; with exopod (Fig. 40 F).—*Pereopod 1* basis 0.3 entire length, with 3 simple setae; ischium with 4 simple setae; merus 1.4 ischium length, with 3 simple setae; carpus 1.6 merus length, with 4 simple setae; propodus as long as carpus, with 5 simple setae; dactylus 0.5 propodus length, with 4 setae; with exopod (Fig. 40 G).—*Pereopod 2* basis 0.6 rest of article's length, with hyaline margins; merus 5 ischium length, with simple setae; carpus 1.6 merus length, with simple setae; dactylus 2.4 propodus length, with 6 simple setae; with exopod (Fig. 40 H).—*Pereopods 3–5* with decreasing basis and increasing carpus; dactylus fused with terminal robust simple seta (Fig. 40 I–K).—*Uropod* peduncle 0.45 pleonite 6 length, 0.46 of endopod length, with serrate margins; exopod 0.4 of endopod length, with terminal robust simple seta; serrate endopod with 2 simple medially and 1 terminal simple seta (Fig. 40 L).

**Remarks.** The species was described by Hale (1945) based only on males from South Australia, without referring to maxillipeds, females being unknown. Our females have similar elevations on frontal lobe and same type of tubercles. Petrescu (1997a, 2001) mentioned the species from Indonesia and Tanzania and gave a short description of a female presumed to be *N. inconstans*. Petrescu (1997b) also found the species in Malaysia and redescribed the male. Australian female specimens from the Australian Museum differ from the Indonesian and Tanzanian females, material that I consider to belong to different species.

**Distribution.** Australia: WA and SA, 16 m (Hale, 1945, 1953), Indonesia(?), Malaysia, Madagascar and Tanzania(?), 10–18 m (Petrescu, 1997a,b, 2001, 2003). The species is also found in NSW, TAS, QLD and the NT, 0–38 m.

### *Nannastacus inflatus* Hale, 1945

Fig. 41

*Nannastacus gibbosus*.—Hale, 1936: 432.

*Nannastacus zimmeri* Hale, 1936: 432.

*Nannastacus inflatus* Hale, 1945: 159.—Băcescu, 1992: 238. Petrescu, 1997a: 139. Stoddart & Lowry, 2003: 416.

**Material examined:** 2♀♀, 8♂♂, P.64577; 2♀♀, P.90697; 1♀, P.64587; 1♂, P.90691; 4♀♀, 1 subadult ♂, P.64595; 1♀, P.64597; 3♀♀, P.90694; 24♀♀, 10♂♂, P.64611; 8♀♀, 5♂♂, P.64612; 1♀, P.64694; 3♀♀, P.64697; 1♂, P.64699; 1 subadult ♂, P.90692; 1♀, P.64761; 1♀, P.90690; 3♀♀, P.90696; 3♀♀, P.64790; 1♀, P.64837; 3♂♂, P.90698; 4, P.64843; 1♀, P.64851; 10♀♀, 11♂♂, P.90695; 2♀♀, 1♂, P.65077; 2♀♀, P.90693; 1♂, P.90991; 2♀♀, P.65603.

**Description of male.** Body length 2.9 mm.—*Carapace* 1.6 as long as high, 1.6 as long as wide, with numerous small, distally dilated granules; pseudorostrum 0.4 carapace length, small elevation behind the eyes (Fig. 41 A–C).—*Antenna 1* peduncle article 1 as long as rest of articles; article 2 with 3 pedunculate setae on process; article 3 1.15 article 2 length; main flagellum 0.6 article 3 length; accessory flagellum with 1 article; aesthetascs 2.7 main flagellum length (Fig. 41 D).—*Maxilliped 3* basis as long as rest of article's length, with 4 plumose setae; merus 4 ischium length, with 1 pappose and 1 plumose seta; carpus 0.9 merus length, with 3 plumose setae; propodus 0.8 carpus length, with 1 plumose seta; dactylus 0.4 propodus length, with 2 simple and 2 pectinate setae; with exopod (Fig. 41 E).—*Pereopod 1* basis 0.6 rest of article's length, with hyaline crest; merus 1.7 ischium length; carpus 1.8 merus length, with 3 simple setae; propodus 0.9 carpus length, with 5 simple setae; dactylus 0.6 propodus length, with 4 simple setae; with exopod (Fig. 41 F).—*Pereopod 2* basis 1.25 rest of article's length, with hyaline crests; merus 2.6 ischium length, with 1 simple seta; carpus 1.5 merus length, with 2 simple setae; dactylus 2.5 propodus length, with 5 simple setae; with exopod (Fig. 41 G).—*Pereopod 3–5* with decreasing basis and increasing carpus; dactylus fused with terminal robust simple seta (Fig. 41 H–J).—*Uropod* peduncle 0.8 pleonite 6 length, 0.3 endopod length; endopod 7.7 exopod length, with 7 setae medially and 1 terminally short simple seta (Fig. 41 K).

**Remarks.** Our males differ from Hale's specimens in: maxilliped 3 basis shorter than in original description; pereopod 1 propodus 0.9 vs. as long as carpus in Hale.

**Distribution.** Australia—WA, SA and QLD, and India, at 0–7 m depth (Băcescu, 1992); and Indonesia (Petrescu, 1997a). Now known from NT and VIC, and from greater depths, to 85 m in Bass Strait (Petrescu, 2018).

### *Nannastacus johnstoni* Hale, 1945

*Nannastacus johnstoni* Hale, 1945: 165–168.—Băcescu, 1992: 238. Stoddart & Lowry, 2003: 416.

**Material examined:** 1♀, P.65079; 1♀, P.65609; 1♀, MGAB CUM 1675.

**Distribution.** Australia (NSW and QLD) and India, 0–16 m (Băcescu, 1992). Now reported also from WA—Vlaming Head (Petrescu, 2018).

### *Nannastacus mitreai* Petrescu, 1995

*Nannastacus mitreai* Petrescu, 1995: 44–47.  
*Nannastacus mitreai* Petrescu, 1997b: 131–135.

**Material examined:** 1♀, P.90649.

**Distribution.** Indonesia and Malaysia, 3 m (Petrescu, 1995, 1997b) and now from Australia—QLD, Lizard Island, at 6 m.

### *Nannastacus nyctagineus* Gamô, 1962

*Nannastacus nyctagineus* Gamô, 1962: 178–180.—Băcescu, 1992: 240. Petrescu, 2003: 104.

**Material examined:** 1♀, P.64586; 6♀♀, 1♂, P.90655; 1♀, P.90654; 4♀♀, 1 subadult ♂, P.65094; 2♀♀, P.65369; 2♀♀, P.65370; 2♀♀, P.65358; 2♀♀, P.65385; 2♀♀, P.65593; 1♂, P.65574; 2♀♀, 1♂, P.65602.

**Distribution.** Japan (Gamô, 1962) and Madagascar (Petrescu, 2003), 0–25 m depth. Now reported for the first time from Australia: QLD—Lizard Island, and Shoalwater Bay, at 3–7 m; SA—Kangaroo Island, at 6 m; and WA—30 km south of Carnarvon, Cape Range National Park, Rottnest Island, Turquoise Bay, and Denham, at 1–2 m depth.

### *Nannastacus papadopoli* sp. nov.

Fig. 42

**Holotype** ♀, 2.1 mm, P.90990, Australia, QLD, Lizard Island lagoon, -14.67° 145.45°, 6 m, plankton tow, 24 Jul 1979, J.M. Leis, JML 79/24.7.4, in AM. **Paratype:** 1♀, P.64710.

**Etymology.** The species is dedicated to the late Aurel Papadopol (1923–2009), former deputy director of “Grigore Antipa” National Museum of Natural History (1966–1989), brilliant Romanian ornithologist, as a sign of deep posthumous gratitude for his work and also for offering me his microscope on which I made the first studies on Cumacea.

**Diagnosis.** Carapace 0.39 entire body length, with distally dilated granules, mid dorsal curved tooth, anterolateral process with a terminal tooth, serrate both margins; pereopod 1 dactylus 0.4 propodus length; pereopod 2nd carpus as long as propodus and dactylus together; uropodal peduncle 0.6 pleonite 6 length; endopod 2.6 peduncle length, 6 exopod length, endopod with 3 short setae.

**Description.** Carapace 0.39 body length, 1.3 as long as high, upturned pseudorostrum, with distally dilated granules; mid dorsal curved tooth; anterolateral process with 1 terminal tooth; serrate both margins; pseudorostrum 0.4 carapace length (Fig. 42 A, B).—Antenna 1 peduncle article 1 1.1 rest of article’s length, with 3 simple setae; article 2 0.8 article 3 length, with 1 tubercle and 2 pedunculate setae; main flagellum 0.7 article 3 length; accessory flagellum with 1 article; aesthetascs 4.2

main flagellum length (Fig. 42 C).—Maxilliped 3 basis 0.7 rest of article’s length, with 3 plumose setae; merus 2.7 ischium length, with 2 plumose setae; carpus 1.1 merus length, with 1 plumose and 2 simple setae; propodus 1.15 carpus length, with 1 plumose and 2 pappose setae; dactylus 0.5 propodus length, with 3 simple setae; with exopod (Fig. 42 D).—Pereopod 1 basis 0.5 rest of article’s length, with hyaline crest; merus 1.5 ischium length; carpus 1.7 merus length, with 2 simple setae; propodus 1.2 carpus length, with 2 simple setae; dactylus 0.4 propodus length, with 6 simple setae; with exopod (Fig. 42 E).—Pereopod 2 basis 0.9 rest of article’s length, with hyaline crest; merus 3 ischium length; carpus 1.6 merus length, with 2 simple setae; dactylus 2 propodus length, with 7 simple setae; with exopod (Fig. 42 F).—Pereopods 3–5 with decreasing basis and increasing carpus; dactylus fused with terminal simple seta (Fig. 42 G–H).—Uropod peduncle 0.6 pleonite 6 length; endopod 2.6 peduncle length, 6 minute exopod length; exopod with long terminal seta; endopod 7 exopod length, with 3 short setae medially and 1 terminal simple seta, shorter than in exopod (Fig. 42 I).

**Remarks.** *Nannastacus papadopoli* sp. nov. resembles *N. antipai* Petrescu, 1995 and *N. wisseni* Petrescu, 1997 from the Indo-Malayan region with a mid-dorsal tooth on the carapace. It differs with posterior teeth on the carapace, acute anterolateral process, integument of carapace with distally dilated granules vs. tiny and densely tubercled, pereopods 3–5 with the dactylus fused in present new species, not fused in the aforementioned two species; *N. papadopoli* and *N. antipai* have three short setae on medial margin of uropodal endopod, *N. wisseni* has seven setae.

**Distribution.** Australia: QLD—Lizard Island, 6 m; and NSW—northern side of Bannister Head, 18 m depth.

### *Nannastacus stebbingi* defformis Fage, 1945

*Nannastacus stebbingi* defformis Fage, 1945: 202–203.—Băcescu, 1992: 244.

**Material examined:** 1♂, P.65057.

**Distribution.** Vietnam, 0 m (Băcescu, 1992) and now from Australian waters: VIC—Flinders, Ocean Beach, at 0 m.

### *Nannastacus subinflatus* Hale, 1945

*Nannastacus zimmeri* (partim).—Hale, 1936.  
*Nannastacus subinflatus* Hale, 1945: 162–165.—Băcescu, 1992: 245. Stoddart & Lowry, 2003: 416.

**Material examined:** 1♀, P.64598; 1♀, 1♂, P.64606; 2, P.64607; 2, P.90650; 1♀, MGAB CUM 1676; 2♀♀, 1♂, P.64774.

**Distribution.** Australia: previously known from WA and SA; now known also from QLD—Shoalwater Bay, at 8 m; and the Coral Sea—Ashmore Reef, at 15 m depth (Petrescu, 2018).

### *Nannastacus wisseni* Petrescu, 1997

*Nannastacus wisseni* Petrescu, 1997b: 135–139.

**Material examined:** 2♀♀, P.90651; 1♀, P.90652; 2, P.90653; 1♀, P.64767; 1♀, P.65592; 1♀, MGAB CUM 1677.

**Distribution.** Malaysia, 1–2 m (Petrescu, 1997b) and now also from Australia: WA and QLD, at 1.5–15 m depth.

### Key to species of *Procampylaspis* from Australian waters

1	Carapace with dorsal tubercles .....	2
—	Carapace without dorsal tubercles .....	5
2	Carapace with one dorsal tubercle .....	<i>P. sordida</i> Hale, 1945
—	Carapace with more than one tubercle .....	3
3	Carapace with tubercles also on pseudorostrum .....	<i>P. capraruae</i> sp. nov.
—	Carapace without tubercles on pseudorostrum .....	4
4	Carapace with 6 pairs of dorsal tubercles .....	<i>P. corberai</i> sp. nov.
—	Carapace with 3 dorsal tubercles .....	<i>P. poorei</i> Petrescu, 2006
5	Pereopod 2 dactylus more than 3 propodus length .....	<i>P. bispinosa</i> Ledoyer, 1988
—	Pereopod 2 dactylus less than 3 propodus length .....	6
6	Uropod with long and slender peduncle .....	<i>P. andamanensis</i> Watling & Angsupanich, 2002
—	Uropod with short and thick peduncle .....	<i>P. australiensis</i> Petrescu, 2006

### Genus *Procampylaspis* Bonnier, 1896

**Diagnosis.** (After Petrescu, 2006). Carapace vaulted; mandible with acute pars molaris; maxilliped 2 dactylus with multiple teeth called “rake-like” (Petrescu, 2006); pereopod 1 with ischium as long as merus.

**Remarks.** Four species, including two new species, are added to the three species previously known from the area.

#### *Procampylaspis andamanensis* Watling & Angsupanich, 2002

*Procampylaspis andamanensis* Watling & Angsupanich, 2002: 34–39.

**Material examined:** 1♀, 2♂♂ diss., P.90709.

**Distribution.** Previously known only from Andaman Sea, 29 m (Watling & Angsupanich, 2002), but now also from Australia: NSW—Broken Bay, from 914 m depth.

#### *Procampylaspis australiensis* Petrescu, 2006

*Procampylaspis australiensis* Petrescu, 2006: 156–158, figs 42–44.

**Material examined:** 1 subadult ♂, P.90708.

**Distribution.** Australia: NSW—off Nowra; and TAS—off Freycinet Peninsula, 204–800 m (Petrescu, 2006). One specimen reported here from NSW—northeast of Eden, at 250–300 m depth.

#### *Procampylaspis bispinosa* Ledoyer, 1988

*Procampylaspis bispinosa* Ledoyer, 1988: 166.

**Material examined:** 1♀, P.90710.

**Distribution.** Mozambique Channel, 00°1'S 45.38°E, 3370 m (Ledoyer, 1988) and now from Australia: VIC—southwest of Gabo Island, at 210 m depth.

#### *Procampylaspis capraruae* sp. nov.

Fig. 43

**Holotype** ♀, 4.3 mm, P.90714, Australia, NSW, east of Long Reef Point, -33.77° 151.72°, 176 m, dredge, 5 Dec 1977, FRV *Kapala*, K77-23-01, in AM. **Paratypes:** 1 subadult ♂, P.90715; 1♀, P.90716.

**Etymology.** The species is named in honour of Dr Claudia Căpraru, medicine specialist in internal medicine, for her generous help in the recovery of my circulatory disorders.

**Diagnosis.** Carapace 0.4 of entire body length, 4 pairs of mid-dorsal tubercles, other 2 pairs between tip of small ocular lobe and tip of pseudorostrum, granular integument, pereonites 3–5 with 1 dorsal tubercle and 1 lateral pair, pleonites 1–4 with 1 dorsal tubercle, 5th with 1 pair, first 5 pleonites with 1 lateral tubercle; maxilliped 2 dactylus with 1<sup>st</sup> and 2<sup>nd</sup> tooth enlarged, 3rd 0.5 previous teeth length, 4th tooth little slender than first two teeth, short distal tooth, short and curved distal extremity; pereopod 1 carpus as long as propodus, longer than merus, 2 dactylus length; pereopod 2 carpus little longer than merus, dactylus 2.4 as long as propodus; uropodal peduncle 1.6 pleonite 6 length, 1.8 endopod length; endopod 1.25 exopod length, with 3 setae medially.

**Description.** Carapace 0.4 body length, 2.5 as long as high; 4 pairs of mid-dorsal tubercles, other 2 pairs between tip of ocular lobe and tip of pseudorostrum; pseudorostrum 0.22 carapace length; granular integument; serrate anterolateral margin; small antennal notch (Fig. 43 A, B).—Pereonites 3–5 with 1 dorsal and 1 lateral tubercle. Pleonites 1–4 also with dorsal tubercle, 5th pleonite with 1 pair, pleonites 1–5 with 1 lateral tubercle. —Maxilliped 2 basis, ischium and merus with medial pappose setae; merus 3 ischium length, as long as carpus, serrate margins; carpus 1.1 merus length; propodus, 1.3 carpus length, with 1 simple and 2 pappose setae; dactylus with 1<sup>st</sup> and 2<sup>nd</sup> tooth enlarged, 3rd tooth 0.5 length of previous teeth, 4th tooth little slender than first two, short distal tooth, short and curved distal extremity (Fig. 43 C). —Maxilliped 3 basis as long as rest of article's length, serrate medially, with 3 plumose setae; merus 4 ischium length, with 1 robust tooth and 2 plumose setae; carpus 0.75

merus length, with 2 teeth and 3 plumose setae; propodus 1.3 carpus length, with 1 plumose and 3 pappose setae; dactylus 0.4 propodus length, with 4 simple setae; with exopod (Fig. 43 D). —*Pereopod 1* basis 0.7 rest of article's length, with 2 plumose setae; ischium with 1 plumose seta; merus 1.3 ischium length, with 1 simple and 1 plumose seta; carpus as long as propodus, with 2 simple setae; propodus 2.5 dactylus length, with 2 simple setae; dactylus 0.5 propodus length, with 6 simple setae; with exopod (Fig. 43 E). —*Pereopod 2* basis 0.7 rest of article's length, with 1 plumose seta; merus 3 ischium length, with 1 plumose seta; carpus 1.1 merus length, with 1 simple and 2 plumose setae; dactylus 2.4 propodus length, with 8 simple setae; with exopod (Fig. 43 F). —*Pereopods 3–5* with decreasing basis and increasing carpus; dactylus fused with terminal seta (Fig. 43 G–J). —*Uropod* peduncle 1.6 pleonite 6 length, 1.8 endopod length, serrate margins; endopod 1.25 exopod length, with 3 setae, both medially, rami with serrate margins and broken terminal seta (Fig. 43 K).

**Remarks.** *Procampylaspis capraruae* sp. nov. is closely related to *P. corberai* sp. nov., both having more than three distal tubercles on carapace. It differs in: carapace with four pairs of tubercles instead of six (also on the pseudorostrum), maxilliped 2 with a shorter dactylus, maxilliped 3 with slender articles, pereopod 1 with the propodus as long as the carpus (longer in *P. corberai*), and in the shorter and thicker uropod.

**Distribution.** Australia: NSW—east of Long Reef Point, at 176 m; and east of Newcastle, at 165 m depth.

### *Procampylaspis corberai* sp. nov.

Fig. 44

**Holotype** ♀, 4.6 mm, P.90712, Australia, NSW, east of Broken Bay, -33.5° 152.2°, 1053–1066 m, beam trawl, 12 Feb 1986, R.T. Springthorpe, FRV *Kapala*, K86-01-10, in AM. **Paratype:** 1♀, diss., P.90713.

**Etymology.** The species is dedicated in honour of Dr Jordi Corbera, Spanish world specialist in Cumacea, as a sign of appreciation of his work and gratitude for his friendship.

**Diagnosis.** Carapace 0.4 of entire length, 6 pairs of dorsal tubercles separated by a carina; maxilliped 2 merus as long as carpus, propodus 1.3 carpus length, dactylus with first 3 teeth equally long, 4th tooth, shorter and curved, long extremity of dactylus; merus of 1st pereopod as long as carpus; carpus of 2nd pereopod as long as dactylus; uropodal peduncle 2.4 pleonite 6 length, 1.2 endopod length, endopod 1.2 exopod length, 3 setae on medial margin.

**Description.** *Carapace* 0.4 body length, 2 longer than high; 6 pairs of dorsal tubercles separated by a carina; short ocular lobe; pseudorostrum lobes meeting in front of ocular lobe, 0.3 carapace length; large antennal notch; anterior margin not excavated (Fig. 44 A). —*Pereonites and pleonites* with smooth integument. —*Antenna 1* peduncle article 1 0.44 rest of articles; article 2 1.05 article 3 length; article 3 0.9 article 2 length; main flagellum 1.3 article 3 length; accessory flagellum with 1 article; aesthetascs 1.04 main flagellum length (Fig. 44 A). —*Maxilliped 2* basis with 1 plumose seta; merus 4 ischium length, with 1 plumose seta; carpus 0.9 merus length, with 1 plumose seta; propodus 1.3 carpus

length, with 2 plumose setae; dactylus with first 3 teeth equally long, 4th tooth, shorter and curved, long extremity of dactylus (Fig. 44 D). —*Maxilliped 3* with slender articles, basis 0.9 rest of article's length, with 3 plumose setae; merus 1.6 ischium length, with 1 tooth and 4 plumose setae; carpus as long as merus, with 1 tooth and 3 plumose setae; propodus 1.3 carpus length, with 3 plumose setae; dactylus 0.6 propodus length, with 5 simple setae; with exopod (Fig. 44 E). —*Pereopod 1* basis 0.7 rest of article's length, with 2 plumose setae; ischium with 1 plumose seta; merus as long as ischium, with 1 simple and 1 plumose seta; carpus as long as merus, with 1 simple and 1 plumose seta; propodus 1.3 carpus length, with 5 simple setae; dactylus 0.5 propodus length, with 6 simple setae; with exopod (Fig. 44 F). —*Pereopod 2* basis 0.6 rest of article's length, with 1 plumose and 6 simple setae; merus 3.5 ischium length, with 1 simple and 1 plumose seta; carpus 1.8 merus length, with 3 simple and 2 plumose setae; dactylus 3.5 propodus length, with 1 simple and 5 microserrate setae; with exopod (Fig. 44 G). —*Pereopods 3–5* with decreasing basis and increasing carpus in pairs 3 and 4 (pair 5 with carpus shorter than in pair 4); ischium and merus with 1 simple seta, carpus and propodus with annulate seta; dactylus with 1 terminal simple seta (Fig. 44 H–J). —*Uropod* peduncle 2.4 pleonite 6 length, 1.2 endopod length, with 10 setae; endopod 1.2 exopod length, with 3 microserrate setae medially and 1 robust simple terminal seta on both rami (Fig. 44 K).

**Remarks.** *Procampylaspis corberai* sp. nov. is closely related to *P. poorei* Petrescu, 2006, having a slender maxilliped 3, pereopod 1 propodus longer than the carpus, pereopod 2 dactylus with plumose setae, endopod of uropod with 3 setae. It differs in having: 12 dorsal tubercles on the carapace instead three, first teeth of dactylus of maxilliped 2 of equal length, and a longer uropod peduncle.

**Distribution.** Australia: NSW—east of Broken Bay, at 1053–1066 m; and northeast of Eden, at 250–300 m depth.

### *Procampylaspis poorei* Petrescu, 2006

*Procampylaspis poorei* Petrescu, 2006: 158–159, figs 45, 46.

**Material examined:** 1♂, P.64730; 1 subadult ♂, P.90711.

**Distribution.** Australia: TAS—Freycinet Peninsula, at 800 m (Petrescu, 2006). Recorded now from the Australian continental slope off NSW—northeast of Coffs Harbour, at 1000 m; and northeast of Eden, at 250–300 m depth.

### *Procampylaspis sordida* Hale, 1945

*Procampylaspis sordida* Hale, 1945: 215. Stoddart & Lowry, 2003: 417.

**Material examined:** 2♀♀, P.90717; 1♀, P.64649; 1♀, P.90718; 1♂, P.90719; 1♀, MGAB CUM 1681; 1♂, P.90788; 1♀, P.90789; 1♀, 1♂, P.90790; 1♀, P.65342; 1♀, P.90791.

**Distribution.** Australia: NSW, 60–100 m (Hale, 1945). Now reported from Tasman Sea—Lord Howe Rise, at 1500 m; NSW—east of Broken Bay, northeast of Coffs Harbour, of Eden, and of Port Jackson, at 75–1015 m; TAS—east of Flinders Island, at 280–350 m; VIC—Bass Strait, at 118–125 m; and WA—Dampier Archipelago, at 14 m depth.

### Key to species of *Scherocumella* from Australian waters

1	Carapace, pereon and pleon with dorsal tubercles .....	2
—	Carapace, pereon and pleon without dorsal tubercles .....	4
2	First 4 pleonites with tubercles .....	3
—	First 2 pleonites with dorsal tubercles .....	<i>S. vieta</i> (Hale, 1945)
3	Pleonites 3–6 with dorsal carina .....	<i>S. weinbergae</i> sp. nov.
—	Pleonites 3–6 without dorsal carina .....	<i>S. clavata</i> (Hale, 1945)
4	Peduncle of uropod longer than pleonite 6 .....	5
—	Peduncle of uropod shorter than pleonite 6 .....	7
5	Peduncle of uropod more than twice as long as pleonite 6 .....	<i>S. nasuta</i> (Zimmer, 1914)
—	Peduncle of uropod less than twice as long as pleonite 6 .....	6
6	Peduncle of uropod 1.3 pleonite 6 length .....	<i>S. sheardi</i> (Hale, 1945)
—	Peduncle of uropod 1.12 pleonite 6 length .....	<i>S. wittmanni</i> sp. nov.
7	Carapace, length/height: 1.5 .....	<i>S. nichollsi</i> (Hale, 1949)
—	Carapace, length/height: 2 .....	<i>S. lima</i> (Hale, 1936)

### Genus *Scherocumella* Watling, 1991

**Diagnosis.** (After Watling, 1991). Carapace with anteroventral corner acute or subacute; ocular lobe divided; pseudorostrum lobes elongate, united in front of ocular lobe; Antenna 1 peduncle article 2 with process; female with 3 exopods, male with 5 exopods; uropod peduncle longer than pleonite 6.

**Remarks.** Five species were previously known; three species are added of which two are new to science.

#### *Scherocumella clavata* (Hale, 1945)

*Nannastacus clavatus* Hale, 1945: 152–154.

*Scherocumella clavata*.—Watling, 1991: 754. Stoddart & Lowry, 2003: 417.

**Material examined:** 52♀♀, 15♂♂, P.64789; 1♂, south of Broulee Island, 2002, lost [see P.65326].

**Distribution.** Australia: SA, 0–16 m (Hale, 1945). Now also reported from NSW—south of Broulee Island, at 8 m depth.

#### *Scherocumella lima* (Hale, 1936)

*Cumella lima* (p.p.) Hale, 1936: 435–437. Watling, 1991: 752.

*Nannastacus lima* Hale, 1945: 165. Stoddart & Lowry, 2003: 416.

**Material examined:** 2♀♀, P.90794.

**Distribution.** Australia: SA and TAS, 2 m (Hale, 1945). Now reported also from WA—Dampier Archipelago, at 14 m depth.

#### *Scherocumella nasuta* (Zimmer, 1914)

*Nannastacus nasutus* Zimmer, 1914: 184–187. Băcescu, 1992: 240.

*Scherocumella nasuta*.—Watling, 1991: 754; Petrescu, 1997a: 139; Petrescu, 199b: 145; Petrescu, 2001b: 115; Stoddart & Lowry, 2003: 417.

**Material examined:** 2♀♀, 2♂♂, P.64576; 1♀, P.64580; 1♀, P.64588; 2♂♂, P.90798; 1♀, MGAB CUM 1686; 1♂,

P.90800; 1♀, P.90805; 3♀♀, 2 subadult ♂♂, P.90804; 1♀, P.90797; 1♂, P.90802; 2♂♂, P.90803; 1♀, P.65317; 10♂♂, P.90799; 1♂, P.65366; 1♂, P.65380; 1♂, P.65578; 1♀, P.90801; 1♂, P.65587; 2♀♀, 1♂, P.65594; 2♀♀, P.65599; 2♀♀, P.65601; 2 subadult ♂♂, P.65606.

**Distribution.** Australia: WA and QLD, 3–16 m (Băcescu, 1992); Indonesia, Malaysia and Tanzania (Petrescu, 1997a,b, 2001). Now reported also from NT—Darwin, at 8–10 m; and at greater depths in QLD—between Lizard Island and Carter Reef, Lizard Island lagoon, North Stradbroke Island, and Dingo Beach, at 0–38 m; and WA—Dampier Archipelago, Denham, Goss Passage, Monkey Mia, Rottnest Island, Turquoise Bay, 30 km south of Carnarvon, Cape Range National Park, and Exmouth Gulf, at 0.5–30 m depth.

#### *Scherocumella nichollsi* (Hale, 1949)

*Nannastacus nichollsi* Hale, 1949: 227, figs 1, 2. Băcescu, 1992: 240.

*Scherocumella nichollsi*.—Watling, 1991: 754. Stoddart & Lowry, 2003: 417. Petrescu, 2006: 162.

**Material examined:** 1♀, P.64599; 4♀♀, P.65596.

**Distribution.** Australia: WA and VIC, at 6–25 m (Petrescu, 2006, 2018).

#### *Scherocumella sheardi* (Hale, 1945)

*Nannastacus sheardi* Hale, 1945: 156, figs 8, 9. Băcescu, 1992: 243.

*Scherocumella sheardi*.—Watling, 1991: 754. Stoddart & Lowry, 2003: 417. Petrescu, 2006: 162. Stoddart & Lowry, 2003: 417.

**Material examined:** 1♀, P.90796; 2♂♂, P.65598; 1♂, P.66042.

**Distribution.** Australia: SA—Gulf St Vincent, and southern and eastern VIC, at 0–4 m (Hale, 1945); eastern Bass Strait, VIC, at 27 m (Petrescu, 2006). Now distribution extended to include WA—Turquoise Bay and Bundege Flats; and QLD—Port Clinton, at 9 m depth (Petrescu, 2018).

### *Scherocumella vieta* (Hale, 1949)

*Nannastacus vietus* Hale, 1949: 230–233. Băcescu, 1992: 247. Stoddart & Lowry, 2003: 418.  
*Scherocumella vieta*.—Watling, 1991: 754.

**Material examined:** 1♂, P.90792; 1♀, P.90793.

**Distribution.** Australia: WA, at 5–6 m (Băcescu, 1992); and now also from QLD—Shoalwater Bay, at 9 m depth.

### *Scherocumella weinbergae* sp. nov.

Fig. 45

**Holotype** ♀, 2.3 mm, P.90680, Australia, TAS, Freycinet Peninsula, Joes Bight, -42.278° 148.312°, 17 m, airlift, sandy boulders, 1 May 1991, R.T. Springthorpe, S.J. Keable, TAS-333, in AM. Paratypes: 1♀, P.90681; 2♀♀, P.90975; 1♀, MGAB CUM 1682.

**Etymology.** The species is dedicated to Dr Medeea Weinberg, world specialist in Diptera Asilidae and other families, who work in the “Grigore Antipa” (1954–1991), with exceptional results in the study of Romanian and foreign faunas (from U.S.A. to Australia), as a sign of great appreciation and eternal gratitude for her work and friendship.

**Diagnosis.** Carapace 0.36 body length, covered with densely small tubercles, 2 dorsal parallel rows of strong and long tubercles, 1 pair just behind each visual complex of lenses, 1 pair of tubercles on top of pseudorostral lobes; pereonites 2–5 and pleonites 1–4 with dorsal pairs of tubercles posteriorly directed, pleonite 5 with 2 tubercles, pleonites 3–5 with 1 dorsal carina, last pleonite with short dorsal serrate line; maxilliped 3 propodus 2nd longest article, 3.6 dactylus length; pereopod 2 dactylus 2 propodus length; uropodal peduncle 1.2 pleonite 6 length, 1.2 endopod length, exopod 0.59 of endopod length, endopod with 1 subterminal short stout seta.

**Description.** Carapace 0.36 body length, 1.8 as long as high; densely covered with small tubercles, 2 dorsal parallel rows of strong and long tubercles, a pair just behind each visual complex of lenses; pseudorostrum obliquely directed, 0.4 carapace length, 1 pair of tubercles on top of pseudorostral lobes; large antennal notch; anterolateral margin serrated in anterior part (Fig. 45 A, B). —Pereonites 2–5 and pleonites 1–4 with dorsal pairs of tubercles posteriorly directed, pleonite 5 with 2 pairs of tubercles, pleonites 3–5 with a dorsal carina, last pleonite with short dorsal serrate line. Pleonites 1–4 also with lateral tubercles. —Antenna 1 peduncle article 1 0.7 rest of article’s length, with 2 simple setae; article 2 1.5 article 3 length, with 3 pedunculate setae and 1 process; main flagellum 0.8 article 3 length; accessory flagellum with 1 article; aesthetascs 3.2 main flagellum length (Fig. 45 D). —Maxilliped 3 basis 0.8 rest of article’s length, with 3 plumose setae and 1 process; merus 2.1 ischium length, with 2 plumose setae; carpus as long as merus, with 1 plumose seta; propodus 1.4 carpus length, with 1 simple and 2 pappose setae; dactylus 0.3 propodus length, with 1 robust terminal seta; with exopod (Fig. 45 E). —Pereopod 1 basis 0.4 rest of article’s length, with hyaline crest; merus 2 ischium length, with 1 tooth; carpus 2 merus length, with hyaline crest; propodus 0.8 carpus length, with 1 simple seta; dactylus 0.6 propodus length, with 2 simple setae; with exopod (Fig. 45 F). —Pereopod 2 basis as long as rest of

articles, hyaline crest and 1 simple seta; merus 7 ischium length, with 1 simple seta; carpus 1.5 merus length, with hyaline crest and 1 simple seta; dactylus 2 propodus length, with 6 simple setae; with exopod (Fig. 45 G). —Pereopods 3–5 with decreasing basis and increasing carpus; basis finely tuberculated; dactylus fused with terminal seta (Fig. 45 H–J). —Uropod peduncle 1.2 pleonite 6 length, with strong serrate margin, 1 serrate carina, 1.2 endopod length; exopod 0.59 endopod length, with 1 terminal simple seta; endopod with serrate margin and 1 serrate carina, with 1 subterminal short and 1 terminal longer simple seta (Fig. 45 K).

**Remarks.** The new species is close related with *S. clavata* (Hale, 1945), but with a dorsal carina on pleonites 3–6, missing in Hale’s species.

**Distribution.** Australia: TAS—Freycinet Peninsula, at 17 m; and NSW—Jervis Bay, at 10–18 m depth.

### *Scherocumella wittmanni* sp. nov.

Fig. 46

**Holotype** ♀, 1.98 mm, P.65091, Australia, QLD, Lizard Island, between bommies inside lagoon entrance, -14.67° 145.47°, 18 m, large hand-held corer on SCUBA, medium to fine sediment, 9 Oct 1978, A.R. Jones, C.J. Short, 2-1-2 | LIZ-2-1-2, in AM.

**Etymology.** The species name honours Prof. Dr Karl J. Wittmann (University of Vienna), world specialist in Mysidacea, as a sign of my deep gratitude for constant friendship.

**Diagnosis.** Carapace 0.33 body length, with numerous granules; maxilliped 3 pereopod 1 carpus as long as ischium and merus together; pereopod 2 dactylus 2.2 propodus length, with simple terminal seta; uropodal peduncle 1.1 pleonite 6 length, 1.2 endopod length, 1.4 exopod length, 2 short setae on medial margin.

**Description.** Carapace 0.33 body length, 1.3 as long as high, with numerous granules; posterior end more elevated, anterolateral margin serrate; antennal notch marked; pseudorostrum 0.5 carapace length; ocular lobe divided (Fig. 46 A). —Pereonites and pleonite 1 with short dorsal tubercles. —Antenna 1 peduncle article 1 0.4 rest of article’s length; article 2 1.1 article 3 length, with process and 2 pedunculate setae; main flagellum 0.9 peduncle article 3, accessory flagellum with 1 article; aesthetascs 2.2 main flagellum length (Fig. 46 B). —Maxilliped 3 basis as long as rest of article’s length, with 1 plumose seta; merus 7.5 ischium length, with 1 tooth and 2 plumose setae; carpus as long as merus, with 1 plumose and 3 simple setae; propodus 1.3 carpus length, with 1 simple and 2 pappose setae; dactylus 0.4 propodus length, with 2 simple setae; with exopod (Fig. 46 C). —Pereopod 1 basis 0.6 rest of article length, with serrate margins and 1 plumose seta; ischium with 1 tooth; merus 2 ischium length, with 1 simple seta; carpus 1.5 merus length, with 4 simple setae; propodus 0.8 carpus length, with 4 simple setae; dactylus 0.4 propodus length, with 3 simple setae; with exopod (Fig. 46 D). —Pereopod 2 basis 0.8 rest of article’s length, with hyaline fringe and 2 simple setae; merus 3.25 ischium length, with 1 simple seta; carpus 1.5 merus length, with 2 simple setae; dactylus 2.2 propodus length, with 6 simple setae; with exopod (Fig. 46 E). —Pereopods

3–5 with decreasing basis and increasing carpus; dactylus fused with terminal robust curved seta (Fig. 46 F–H). — *Uropod* peduncle 1.1 pleonite 6 length, 1.2 endopod length, with serrate medially margin and 1 terminal robust simple seta; endopod 1.4 exopod length, with hyaline fringe and 3 simple setae (Fig. 46 I).

**Remarks.** *Scherocumella wittmanni* sp. nov. is most similar with *S. sheardi* (Hale, 1945). Main difference: uropod peduncle/pleonite 6 ratio, 1.1 in *S. wittmanni* and 1.5 in *S. sheardi*.

**Distribution.** Australia: QLD—Lizard Island, at 18 m depth.

## Genus *Schizocuma* Băcescu, 1972

**Diagnosis.** (After Watling, 1991). Carapace anteroventral corner rounded or subacute; ocular lobe medially, incompletely subdivided; pseudorostral lobes separated; antenna 1 peduncle article 2 process missing; uropodal peduncle longer than pleonite 6.

**Remarks.** This is the first mention of the genus from Australia, previously known from deep waters of both sides of the Atlantic, Indian Ocean (South African coast) and Antarctica. Two new species present in Australian Museum collection are added to the five already known.

### *Schizocuma antipai* sp. nov.

Fig. 47

**Holotype** ♀, 3.3 mm, P.90701, Tasman Sea, Lord Howe Rise, -27.98° 162.86°, 1250 m, epibenthic sled, coarse sediment

with pumice, 6 May 1989, J.K. Lowry & party, RV *Franklin*, FR0589-28, in AM. **Paratypes:** 1♀, 1 subadult ♂, P.90702.

**Etymology.** The species is dedicated to the memory of Dr Grigore Antipa (1867–1944), founder of hydrobiological studies in Romania, brilliant specialist in fishes, director of Romanian Fisheries, secretary of Romanian Academy, pupil of Ernst Haeckel, founder and director of the spectacular Museum of Natural History from Bucharest (1893–1944), main Romanian natural history museum, as an eternal gratitude and high respect for all his work and life devoted to his people and country, with the occasion of centennial anniversary of opening of this museum.

**Diagnosis.** Carapace 0.24 of entire length, 2 mid-dorsal spines; maxilliped 3 propodus 2nd longest article, 1.3 carpus length; pereopod 1 propodus 2nd longest article, 3.2 dactylus length; pereopod 2 dactylus 2.5 propodus length; uropodal peduncle 4.1 pleonite 6 length 1.8 endopod length; exopod as long as endopod; endopod with 3 simple setae medially.

**Description.** Carapace smooth, 0.24 of entire length, 1.6 as long as high, 2 mid-dorsal spines; upturned pseudorostrum, 0.5 carapace length; siphons as long as carapace length; serrate anterolateral margin; large antennal notch (Fig. 48 A). — *Pleon* longer than rest of body, slender segments. — *Antenna 1* peduncle article 1 1.6 rest of article's length, with 2 simple setae; article 2 with 1 simple seta; article 3 with 2 pedunculate setae; main flagellum 1.3 peduncle article 3 length; accessory flagellum, with 2 articles; aesthetascs 2.2 main flagellum length (Fig. 47 B, C). — *Maxilliped 3* basis 0.6 rest of article's length, with 1 plumose and 2 pappose setae; merus 2.2 ischium length, with 1 simple and 1 pappose seta; carpus 1.4 merus length, with 1 simple and 2 pappose setae; propodus, 1.3 carpus length, with 2 apposite setae; dactylus 0.5 propodus length, with 2 terminal microserate

## Key to species of *Schizocuma* from Australian waters

1	Carapace, pereon and pleon with dorsal spines .....	2
—	Carapace with dorsal spines, missing from pereon and pleon .....	6
2	Carapace to pleon with serrate dorsal carina .....	<i>S. calmani</i> Stebbing, 1912
—	Carapace with or without dorsal carina, pereon and pleon without .....	3
3	Carapace with dorsal carina .....	4
—	Carapace without dorsal carina .....	<i>S. bacescui</i> sp. nov.
4	Carapace with more than 10 dorsal spines .....	<i>S. spinosum</i> (Jones, 1984)
—	Carapace less than 10 dorsal spines .....	5
5	Carapace with spines on ocular lobe and posterior extremity .....	<i>S. molossa</i> (Zimmer, 1907)
—	Carapace with spines only on ocular lobe .....	<i>S. spinoculatum</i> (Jones, 1984)
6	Uropodal peduncle more than 2 endopod length .....	<i>S. vema</i> Băcescu, 1972
—	Uropodal peduncle less than 2 endopod length .....	<i>S. antipai</i> sp. nov.

setae; with exopod (Fig. 47 D).—*Pereopod 1* basis 0.3 rest of article's length, with 2 simple setae; ischium with 1 simple seta; merus 2.3 ischium length, with 1 simple seta; carpus 2 merus length, with 4 setae; propodus 1.06 carpus length, with 5 setae; dactylus 0.3 propodus length, with 3 simple setae; with exopod (Fig. 47 E).—*Pereopod 2* basis 0.5 rest of article's length, with 1 simple seta; merus 0.3 ischium length, with 1 simple seta; carpus 1.5 merus length, with 2 simple setae; dactylus 2.5 propodus length, with simple setae; with exopod (Fig. 47 F).—*Pereopod 3* basis 0.5 rest of article's length; carpus 3 merus length; propodus 0.3 carpus length; dactylus fused with terminal long seta (Fig. 47 G).—*Pereopod 4* basis 0.5 rest of article's length; merus 1.6 ischium length; carpus 2.1 merus length; propodus 0.4 carpus length; dactylus fused with terminal long seta (Fig. 47 H).—*Pereopod 5* basis longer than half of pereopod, carpus 2.2 merus length, dactylus fused with terminal seta (Fig. 47 I).—*Uropod* peduncle 4.1 pleonite 6 length, 1.8 endopod length; exopod as long as endopod, 2 long setae on both margins, long simple terminal seta; endopod with 3 long simple setae medially and 1 long terminal simple seta (Fig. 47 J).

**Remarks.** *Schizocuma antipai* sp. nov. is very closely related to *S. vema* Băcescu (1972) from eastern and western Atlantic. It differs in the carapace having two dorsal spines vs. of 1–4 in *S. vema*.

**Distribution.** Continental slope of eastern Australia: Lord Howe Rise, at 1250 m depth.

### *Schizocuma bacescui* sp. nov.

Fig. 48

**Holotype** subadult ♂, 4.4 mm, P.90699, Australia, NSW, northeast of Eden, -37.003° 150.335°, 250–300 m, Waren dredge, shelly bryozoan sand, 11 Dec 1986, P.A. Hutchings, W.F. Ponder, R.T. Springthorpe, RV *Franklin*, FR1086-05, in AM. **Paratypes:** 7 subadult ♂♂, P.90700; 1 subadult ♂, P.65075.

**Etymology.** The species is dedicated to the memory of Dr Mihai Băcescu (1908–1999), one of the most famous specialists in Crustacea Peracarida, former director of the “Grigore Antipa” Museum (1964–1988), as a sign of eternal gratitude for all his generous advices he offered to his last pupil in Crustacea.

**Diagnosis.** Carapace 0.3 entire length, 6 pairs of sidespins dorsally; eyelobe without lenses; pereon with dorsal and lateral spines, pleon with dorsal and lateral spines on first 2

segments, only lateral spines on other 4 segments; antenna 1 accessory flagellum with 2 articles; maxilliped 3 merus with 1 tooth propodus, 1.4 merus length; pereopod 1 carpus 2nd longest article; pereopod 2 dactylus, 2.5 propodus length; uropodal peduncle 2 pleonite 6 length, 1.9 endopod length, seven setae medially; endopod 1.4 exopod length.

**Description.** Carapace 0.3 body length, 1.6 as long as high, 6 pairs of spines dorsally; ocular lobe without lenses; 1 pair of spines on frontal lobe; serrate pseudorostral lobe, pseudorostral lobe 0.3 carapace length; antennal notch well marked; serrate anterolateral margin 1 tooth on anterolateral corner; several long simple setae (Fig. 48 A, B).—*Pereonites* with dorsal and lateral spines.—*Pleonites 1 and 2* with dorsal and lateral spines, only lateral on other 4 segments.—*Antenna 1* peduncle article 1 as long as rest of articles, with 1 tooth medially; article 2 as long as article 3, with 1 tubercle; main flagellum, with 3 articles, 1.16 article 3 length; accessory flagellum, with 2 articles, 0.9 main flagellum article 1; aesthetascs 2 main flagellum length (Fig. 48 C, D).—*Maxilliped 3* basis 0.8 rest of article's length, with process, 1 simple and 2 plumose setae; merus 3 ischium length, with 1 tooth and 4 plumose setae; carpus 0.8 merus length, with 3 plumose seta; propodus 1.7 carpus length, with 1 simple and 2 pappose setae; dactylus 0.5 propodus length, with 4 simple setae; with exopod (Fig. 48 E).—*Pereopod 1* basis 0.6 of entire length; merus 2 ischium length, with 1 simple seta; carpus 2 merus length, with 2 simple setae; propodus 0.8 carpus length, with 4 simple setae; dactylus 0.5 propodus length, with 5 simple setae; with exopod (Fig. 48 F).—*Pereopod 2* basis 0.3 rest of article's length; merus 4.3 ischium length, with 1 simple seta; carpus 1.7 merus length, with 2 simple setae; dactylus, 2.5 propodus length, with 8 simple setae; with exopod (Fig. 48 G).—*Pereopods 3–5* with decreasing basis and increasing carpus; with simple and annulate setae; dactylus with 1 long simple terminal seta; pereopods 3, 4 with exopods (Fig. 48 H–J).—*Uropod* peduncle 2 pleonite 6 length, 1.9 endopod length, seven simple setae medially; endopod 1.4 exopod length, exopod terminal seta, broken, endopod with serrate margin medially and 7 simple setae (Fig. 48 K).

**Remarks.** *Schizocuma bacescui* sp. nov. is similar to *S. spinosum* (Jones, 1984) from the southwest Atlantic, with numerous dorsal spines. It differs with: carapace with fewer spines, six pairs of spines vs. seven pairs in *S. spinosum*, without mid-dorsal carina, shorter peduncle of uropod than in *S. spinosum*.

**Distribution.** Australia: SA—Kangaroo Island, at 6 m; and NSW—northeast of Eden, at 250–300 m depth.

### Key to species of *Schizotrema* from Australian waters

#### Females

- 1 Carapace with an anterolateral process ..... 2
- Carapace without anterolateral process ..... 7
- 2 Carapace with downwardly bent anterior process ..... *S. leswatlingi* sp. nov.
- Carapace with straight anterior process ..... 3
- 3 Carapace integument with tubercles ..... 5
- Carapace integument without tubercles ..... 4
- 4 Anteroventral corner acute ..... *S. sordidum* Calman, 1911
- Anteroventral corner blunt ..... *S. zimmeri* sp. nov.
- 5 Carapace integument with spatulate spines ..... *S. sakaii* Gamō, 1964
- Carapace with spines and tubercles ..... 6
- 6 Spines from carapace with groups of setae on top ..... *S. resimum* Hale, 1949
- Carapace with spines and small setae ..... *S. bifrons* Calman, 1911
- 7 Peduncle of uropod longer than pleonite 6 ..... *S. deppressum* Calman, 1911
- Peduncle of uropod shorter than pleonite 6 ..... 8
- 8 Uropodal endopod 3.5 as long as exopod ..... *S. mudum* Tafe & Greenwood, 1996
- Uropodal endopod less than 3 exopod length ..... 9
- 9 Uropodal endopod more than 2 exopod length ..... *S. aculeatum* Hale, 1936
- Uropodal endopod less than 2 exopod length ..... *S. dumitriui* sp. nov.

#### Males

- 1 Carapace with downwardly bent anterior process ..... *S. bidens* Fage, 1945
- Carapace with straight anterior process ..... 2
- 2 Peduncle of uropod longer than pleonite 6 ..... *S. radui* sp. nov.
- Peduncle of uropod shorter than pleonite 6 ..... 3
- 3 Endopod of uropod more than 3 exopod length ..... 4
- Endopod of uropod more than 2 exopod length ..... *S. mudum* Tafe & Greenwood, 1996
- 4 Carapace with numerous spines and tubercles ..... 5
- Carapace with a reticulate pattern of indentations ..... *S. zimmeri* sp. nov.
- 5 Uropodal endopod with 2 subterminal medial setae ..... *S. aculeatum* Hale, 1936
- Endopod of uropod without subterminal setae ..... *S. leopardinum* Hale, 1949

#### Genus *Schizotrema* Calman, 1911

**Diagnosis** (after Watling, 1991). Carapace anteroventral corner acute; ocular lobe divided; antenna 1 process article 2 with process; uropod peduncle equal or shorter than pleonite 6.

**Remarks.** Four species of *Schizotrema* were previously known from Australia; eight are added here, three being new to science.

#### *Schizotrema aculeatum* Hale, 1936

*Schizotrema bifrons aculeata* Hale, 1936: 430, fig. 18.

*Schizotrema aculeata*.—Hale, 1945: 168, fig. 16.

*Schizotrema aculeatum*.—Stoddart & Lowry, 2003: 418. Petrescu, 2006: 163.

**Material examined:** 1♂, P.64579; 1♂, P.64584; 1 subadult ♂, P.64585; 1♀, P.90815; 1♂, MGAB CUM 1683; 2♀♀, P.90816; 1 subadult ♂, P.64691; 2♀♀, P.90817; 1♀, P.64720; 1♂, P.64777; 1♀, P.65360; 1♀, P.65371; 1♂, P.65576

**Distribution.** Australia: SA—Gulf St Vincent, and WA, at 2–503 m depth (Petrescu, 2006). The species is now reported

more widely from Coral Sea—Boot Reef, at 1 m; Australia: QLD—northeast of Cape York, west end of Raine Island, at 2–20 m; NSW—northern side of Bannister Head, at 18 m; VIC—Portland, and southeast of Lakes Entrance, at 10–41 m; and WA—30 km south of Carnarvon, Cape Range National Park, Denham, King George Sound, northwest of West Lewis Island, and Rottnest Island, at 0.2–3 m depth.

### *Schizotrema bidens* Fage, 1945

*Schizotrema bidens* Fage, 1945: 208–209. Watling, 1991: 755. Băcescu, 1992: 260.

**Material examined:** 1 subadult ♂, P.90813.

**Distribution.** Vietnam, at 0 m (Fage, 1945). Reported here for the first time from Australia: NT, Arafura Sea—patch reef on north side of New Year Island, at 10 m depth.

### *Schizotrema bifrons* Calman, 1911

Fig. 49

*Schizotrema bifrons* Calman, 1911: 362–363. Watling, 1991: 755. Băcescu, 1992: 260.

*Schizotrema aculeatum* Hale, 1936. Stoddart & Lowry, 2003: 418.

**Material examined:** 1 ♂, P.90814.

**Remarks.** The species was described by Calman from India based on a female. The present male presents an integument with stronger spines, without low lateral row of spines and anterolateral process (Fig. 51 A, B); endopod of uropod 1.7 exopod length, longer than in female of Calman (Fig. 49 C).

**Distribution.** Previously known only from India, at 2–9 m depth. The species is now recorded from Australia: WA—Cape Range National Park, at 1.5 m depth.

### *Schizotrema depressum* Calman, 1911

*Schizotrema depressum* Calman, 1911: 361–362. Hale, 1937: 74. Watling, 1991: 755. Băcescu, 1992: 260. Petrescu, 1997b: 147. Petrescu, 2001b: 115–116. Stoddart & Lowry, 2003: 418.

**Material examined:** 3 ♀♀, P.64616; 1 ♀, P.90806.

**Distribution.** Australia (SA) and Thailand, at 1.8 m depth (Băcescu, 1992) and Malaysia and Tanzania (Petrescu, 1997b, 2001). Now known to have a wider range in Australia from NSW—Little Island, east of entrance to Port Stephens, at 19.1 m, to WA—Dampier Archipelago, at 21 m depth.

### *Schizotrema dumitriui* sp. nov.

Fig. 50

**Holotype** ♀, 1.3 mm, P.90987, Coral Sea, Portlock Reef, reef slope, -9.643° 144.828°, 30 m, scuba, *Halimeda*, 29 Jan 1993, S.J. Keable, QLD 778, in AM. **Paratypes:** 1 diss. ♀, P.90988; 1 ♀, P.90989.

**Etymology.** The species bears the name of Dr Bujor Dumitriu (1954–2010), Romanian engineer, specialist in industrial robots, as a sign of pious homage.

**Diagnosis.** Carapace 0.3 body length; maxilliped 3 basis 0.6 rest of article's length, propodus 1.4 carpus length; pereopod 2 dactylus, 2nd longest article, 2 propodus length; uropodal peduncle 0.8 of pleonite 6 length, 0.8 of endopod length; endopod 1.4 exopod length.

**Description.** Carapace 0.3 body length, 1.5 as long as high, smooth; ocular lobe divided; pseudorostral lobes 0.4 carapace length, completely separated; antennal notch with strong anterolateral tooth (Fig. 50 A, B). —Antenna 1 peduncle article 1 0.8 rest of article's length, with 2 simple setae; article 2 with 3 pedunculate setae; article 3 with 1 simple and 2 pedunculate setae; main flagellum 1.2 article 3 length; accessory flagellum with 1 article; aesthetascs 2 main flagellum length (Fig. 50 C). —Maxilliped 2 basis with 1 pappose seta medially; merus 2.2 ischium length, with 1 plumose seta; carpus 1.1 merus length, with 2 plumose setae; propodus 0.8 carpus length, with 2 simple and 2 penate setae; dactylus 0.5 propodus length, with 1 robust terminal seta (Fig. 50 D). —Maxilliped 3 basis 0.6 rest of article's length, with 4 plumose setae; merus 4 ischium length, with 2 plumose setae; carpus 1.1 merus length, with 1 simple and 3 plumose setae; propodus 1.5 carpus length, with 10 setulae, 1 plumose and 2 pappose setae; dactylus 0.6 of propodus length, with 1 setule and 4 setae (Fig. 50 E). —Pereopod 1 basis 0.5 rest of article's length, with 1 simple seta; merus 2.5 ischium length, with 1 simple seta; carpus 2 merus length, with 3 simple setae; propodus 0.7 carpus length, with 4 simple setae; dactylus 0.7 propodus length, with 3 simple setae (Fig. 50 F). —Pereopod 2 basis 0.5 rest of article's length; merus 5.6 ischium length, with 1 simple seta; carpus 1.4 merus length, with 2 simple setae; dactylus 2 propodus length, with 1 setule and 4 simple setae (Fig. 50 G). —Pereopods 3–5 with decreasing basis and increasing carpus length; dactylus fused with terminal seta (Fig. 50 H–J). —Uropodal peduncle 0.8 of pleonite 6 length, 0.8 of endopod length, with lateral hyaline fringes; exopod with 3 simple setae; endopod 1.4 exopod length, with hyaline fringes, 3 setae medially, 1 simple terminal seta on both rami (Fig. 50 K).

**Remarks.** *Schizotrema dumitriui* sp. nov. is closely related to *S. nudum* Tafe & Greenwood, 1996 in the regarding carapace lacking tubercles or spines. It mainly differs by the uropod longer peduncle and exopod.

**Distribution.** Coral Sea: Portlock Reef, at 30 m; and Australia: WA—Dampier Archipelago, at 6–14 m depth.

### *Schizotrema leopardinum* Hale, 1949

*Schizotrema leopardinum* Hale, 1949: 234–236. Watling, 1991: 755. Băcescu, 1992: 260. Petrescu, 2001b: 116. Stoddart & Lowry, 2003: 418. Petrescu, 2006: 163.

**Material examined:** 1 ♀, P.90818; 1 ♀, P.65083; 1 ♀, 1 ♂, P.65089; 1 ♀, P.65084; 1 ♀, P.65087; 2 ♀♀, P.65095; 2 ♀♀, 1 ♂, P.65099; 4 ♀♀, P.65295; 1 ♀, P.65374; 1 ♂, P.65375; 1 ♂, P.65383; 3 ♂♂, P.65610.

**Distribution.** Australia (WA) at 3–5 m (Băcescu, 1992) and Tanzania (Petrescu, 2001). Now known to be more widespread in Australia: QLD—Lizard Island, at 3–21.2 m; SA—Yorke Peninsula; and WA—30 km south of Carnarvon, Rottnest Island and Vlaming Head, at 0.5–1 m depth.

### *Schizotrema leswatlingi* sp. nov.

Fig. 51

**Holotype** adult ♀, 1.35 mm, P.90807, Australia, WA, Dampier Archipelago, 1 km northeast of Legendre Island, -20.389° 116.897°, 14 m, by hand on SCUBA, dead coral, 6 Aug 2000, P.A. Hutchings, L. Avery, WA 645, in AM. **Paratype**, 1♀, P.65607.

**Etymology.** The species is dedicated to Prof. Dr Les Watling (University of Hawaii, U.S.A.), world specialist in Peracarida, as a sign of extreme appreciation of his work and gratitude for his help in receiving the scholarship from the Australian Museum in 2003.

**Diagnosis.** Carapace 0.4 body length; pereonites 3–5 with dorsal pair of acute tubercles, pleonites 2–6 also with a pair of dorsal acute tubercles; maxilliped 3 merus as long as propodus, longer than carpus and dactylus; pereopod 1 bulky merus with a dorsal tooth, propodus 1.2 carpus length, 2 dactylus length; pereopod 2 carpus 2nd longest article; uropodal peduncle 0.64 of pleonite 6 length, exopod as long as 6th pleonite, half of endopod, terminal robust seta 1.32 exopod length, endopod, twice peduncle length, with 2 subterminal setae and a terminal robust one.

**Description.** Carapace 0.4 body length, 2 longer than high; 1 anterior dorsal elevation at basis of frontal lobe with 2 teeth, 1 pair of teeth medially, with 2 stronger teeth and 1 posterior elevation with 3 pairs of teeth; pseudorostrum 0.4 carapace length, lobes meeting in front of ocular lobe, oblique directed, with terminal teeth; ocular lobe with 2 pairs of teeth between the two groups of lenses; anterolateral margin serrate; anterolateral process downwardly bent; antennal notch, large (Fig. 51 A). —Pereonites 3–5 with dorsal pair of acute tubercles. —Pleonites 2–6 also with a pair of dorsal acute tubercles. —Antenna 1 peduncle article 1 0.9 rest of article's length; article 2 1.1 article 3 length, with process; main flagellum, with 2 articles; accessory flagellum with 1 article; aesthetascs 2.8 main flagellum length (Fig. 51 C). —Maxilliped 3 basis 0.5 rest of article's length, with 4 plumose setae; merus 4 ischium length, with 1 plumose seta; carpus 0.9 merus length, with 3 plumose setae; propodus 1.1 carpus length, with 1 plumose and 2 pappose setae; dactylus 0.8 propodus length, with terminal simple setae; with exopod (Fig. 51 D). —Pereopod 1 basis 0.24 pereopod length, with serrate margin; merus 2.6 ischium length, with 1 tooth; carpus 1.3 merus length, with 2 setae; propodus 1.2 carpus length, with 1 simple seta; dactylus 0.5 propodus length, with 1 terminal simple seta (Fig. 51 E). —Pereopod 2 basis 0.3 pereopod length, with hyaline fringe; merus 7 ischium length, with 1 simple seta; carpus 1.2 merus length, with 2 simple setae; dactylus 2 propodus length, with 7 simple terminal setae (Fig. 51 F). —Pereopods 3–5 with decreasing basis and increasing carpus; dactylus fused with terminal simple seta (Fig. 51 G–I). —Uropod peduncle 0.64 pleonite 6 length, as long as exopod; exopod 0.4 endopod length, with 1 terminal simple robust seta, endopod serrate medially, with 2 simple setae (Fig. 51 J).

**Remarks.** *Schizotrema leswatlingi* sp. nov. has an anterolateral process downwardly bent, a feature otherwise present only in *S. bidentata* Fage (1945) from Annam (central Vietnam). Taking into consideration the sexual dimorphism (only males are known for the Vietnamese species) present

also in this genus, the new species differs with: elevations, tubercles and teeth from dorsal side of body, pereopod 1 with propodus longer than carpus instead of equal length, smaller ratio peduncle of uropod/ last pleonite.

**Distribution.** Australia: WA—Dampier Archipelago and Turquoise Bay, at 14 m depth.

### *Schizotrema nudum* Tafe & Greenwood, 1996

*Schizotrema nudum* Tafe & Greenwood, 1996: 382–389. Stoddart & Lowry, 2003: 418.

**Material examined:** 1♀, P.65377.

**Distribution.** Australia: QLD—Moreton Bay, 2–3 m depth (Tafe & Greenwood, 1996) and now from WA: Rottnest Island.

### *Schizotrema radui* sp. nov.

Fig. 52

**Holotype** ♂, 2.5 mm, P.64591, Australia, WA, Cape Range National Park, inshore limestone patches near Neds Camp, -21.98° 113.91°, 0–1 m, brown algae with epiphytic algae, sediment, 31 Dec 1983, H.E. Stoddart, WA-311, in AM. **Paratypes:** 1 diss. ♂, MGAB CUM 1685; 1♂, P.64659; 2♀♀, 1♂, P.90812.

**Etymology.** The species is named in honour of Dr Alecsandru Radu, medicine expert in blood circulation who helped me very much in recovering my health problems, as a sign of high gratitude.

**Diagnosis.** Carapace 0.35 of entire length, 2 pairs of groups of large lenses; maxilliped 3 basis, massive; pereopod 1 propodus as long as carpus; pereopod 2 carpus, 2nd longest article; dactylus 2.5 propodus length; uropod peduncle 1.1 pleonite 6 length; exopod 0.07 endopod length, endopod 2.7 peduncle length, 9 small setae on inner margin.

**Description.** Carapace 0.35 of entire length, 1.8 as long as high; posterior elevation; straight pseudorostrum, 0.36 carapace length; large antennal notch; 2 pairs of groups of large lenses; anterolateral corner with 1 small tooth (Fig. 52 A). —Pleon, half of entire body. —Antenna 1 peduncle article 1 0.7 rest of article's length, with 3 simple setae; article 2 with 1 process, 2 simple and 2 pedunculate setae; article 3 with 3 pedunculate setae; main flagellum 1.1 article 3 length, accessory flagellum with 1 article; aesthetascs 1.8 main flagellum length (Fig. 52 B). —Maxilliped 3 basis 0.9 rest of article's length, with 3 plumose setae; merus 2.6 ischium length, with 2 plumose setae; carpus as long as merus, with 1 plumose and 3 simple setae; propodus 1.1 carpus length, with 1 plumose and 2 appose setae; dactylus 0.6 propodus length, with 2 simple and 2 microserrate setae; with exopod (Fig. 52 C). —Pereopod 1 0.6 rest of article's length, with hyaline fringe and 1 simple seta; merus carpus as long as propodus, twice dactylus length; merus 1.7 ischium length, with 1 simple setae; carpus 1.9 merus length, with 2 simple setae; propodus 1.05 carpus length, with 5 simple setae; dactylus 0.4 propodus length, with 6 simple setae; with exopod (Fig. 52 D). —Pereopod 2 basis 1.1 rest of article's length, with hyaline fringes; merus as long as ischium, with 1 simple seta; carpus 1.5 merus length, with 5 simple setae;

dactylus 2.5 propodus length; with exopod (Fig. 52 E, F). —*Pereopods 3–5* with decreasing basis and increasing carpus length; dactylus fused with terminal simple seta; pereopods 3 and 4 with exopods (Fig. 52 G–I). —*Uropod* peduncle 1.05 pleonite 6 length; exopod, 0.07 endopod length, with 1 long robust terminal seta; endopod 2.7 peduncle length, with 9 short simple setae medially and 1 robust terminal simple seta (Fig. 52 J).

**Remarks.** *Schizotrema radui* sp. nov. is the only species of the genus with such uropods, tiny exopod and huge endopod.

**Distribution.** Australia: WA—Cape Range National Park and Dampier Archipelago, at 0–14 m; and NSW—east of Newcastle, at 2632–2698 m depth.

### *Schizotrema sakaii* Gamô, 1964

*Schizotrema sakaii* Gamô, 1964: 80, 86, pl. 15, fig. 21. Watling, 1991: 755. Băcescu, 1992: 261. Petrescu, 1997b: 147.

**Material examined:** 3♀♀, 1 subadult ♂, P.90808; 1♀, P.90809; 1♀, P.90810; 1♂, P.90811.

**Distribution.** Japan (Gamô, 1964), Malaysia (Petrescu, 1997b) and now from Australia: WA—Cape Range National Park, at 0–2 m; and QLD—GBRMPA Reef 10-418, -10.999° 144.020°, at 6 m depth.

### *Schizotrema sordidum* Calman, 1911

*Schizotrema sordidum* Calman, 1911: 341, 363–364, pl. 34, fig. 22–24. Watling, 1991: 755. Băcescu, 1992: 261. Petrescu, 1997a: 141. Petrescu, 2001b: 116–121. Stoddart & Lowry, 2003.

**Material examined:** 1♂, P.64721.

**Distribution.** Thailand and Vietnam, at 0–2 m (Băcescu, 1992); Indonesia and Tanzania, at 7 m (Petrescu, 1997a, 2001), and now from Australia: NSW—Ulladulla, at 13 m depth.

### *Schizotrema zimmeri* sp. nov.

Fig. 53

*Schizotrema sordidum*.—Zimmer, 1952: 20–21, figs. 32–38. Nec *Schizotrema sordidum* Calman, 1911: 341, 363–364, pl. 34, fig. 22–24.

**Holotype** ♀, P.64770. Coral Sea, Portlock Reef, reef slope, -9.643° 144.828°, 30 m, scuba, *Halimeda*, 29 Jan 1993, S.J. Keable, QLD 778, in AM. **Paratype** 1♂, Gulf of Thailand (Siam), ZMHB (Zoologisches Museum der Humboldt-Universität, Berlin), lost after examination by the author.

**Etymology.** The species is dedicated to Carl Zimmer, Director of the Zoologisches Museum der Humboldt-Universität, Berlin, who described the male and noticed some differences between his specimen and Calman's specimens of *Schizotrema sordidum*. Zimmer's specimen is redescribed and elevated to species rank in this paper.

**Diagnosis.** Carapace 1.3 longer than high, 1.1 longer than large; divided ocular lobe; separate siphons; pseudorostrum 0.5 carapace length; massive anterolateral corner; ventral serrate margin; maxilliped 3 basis 0.9 rest of article's length, merus as long as carpus and propodus; pereopod 1 propodus 1.08 carpus length; pereopod 2 basis 0.8 rest of article's length, pereopod 2 dactylus 3 propodus length; uropod peduncle 0.5 pleonite 6 length, exopod 0.8 uropod peduncle length, endopod 3.07 peduncle length.

**Description of female.** Carapace 0.35 body length, bulky, 1.3 longer than high, 1.1 longer than large; divided ocular lobe; separate siphons; pseudorostrum 0.5 carapace length, upturned; large pair of elevations on posterior part; large antennal notch; prominent blunt anterolateral corner; serrate ventral margin; a few dorsal hairs. (Fig. 53 A, B). —*Antenna 1* peduncle article 1 0.9 rest of article's length, with 3 simple setae; article 2 0.9 article 3 length, with process and 2 pedunculate setae; article 3 with 3 pedunculate setae; main flagellum as long as article 3; accessory flagellum with 1 article; aesthetascs 2.4 main flagellum length (Fig. 53 C). —*Maxilliped 3* basis 0.79 rest of article's length, its lateral process reaches mero-carpal articulation, with 4 plumose setae; merus 2.8 ischium length, with 2 plumose setae; carpus 1.1 merus length, with 1 simple and 2 plumose setae; propodus as long as merus, with 2 pappose setae; dactylus 0.64 propodus length, with 4 simple setae; with exopod (Fig. 53 D). —*Pereopod 1* basis 0.4 rest of article's length, with hyaline fringe and 1 simple seta; merus 1.5 ischium length, with 3 simple setae; carpus 1.8 merus length, with 3 simple setae; propodus 0.9 carpus length, with 6 simple setae; dactylus 0.6 propodus length, with 4 simple setae; with exopod (Fig. 53 E). —*Pereopod 2* basis 0.8 rest of article's length, with hyaline fringe; merus 4.5 ischium length, with 1 simple seta; carpus 1.6 merus length, with 1 simple seta; dactylus 3.5 propodus length, with 5 simple setae; with exopod (Fig. 53 F). —*Pereopods 3–5* with decreasing basis and increasing carpus length; dactylus fused with terminal robust simple seta (Fig. 53 G–I). —*Uropod* peduncle 0.54 pleonite 6 length; exopod 0.78 uropod peduncle length, terminal seta 2.6 exopod length; endopod 3.07 peduncle length, endopod 3.58 exopod length, with scales covered with setulae medially, 1 subterminal and 1 terminal simple seta (Fig. 53 J–K).

**Remarks.** Zimmer (1952) published the description of *S. sordidum* Calman from Indochina (Vietnam), and illustrated the anterior part of carapace, cephalothorax in dorsal view, antenna 1, pereopods 1, 2 and 5 and uropod. He stated: “It is not easy to explain the differences in the length of the uropodal exopod, which is only half the length of the endopod according to Calman's description, however, in the present males it is less 1/3 that length! Despite of these last-mentioned differences, I do not doubt, that these males belong to *S. sordidum*.” This is an additional description of a female that matches the Zimmer male, justifying it as a new species. *Schizotrema zimmeri* sp. nov. is closely related to *S. mudum* Tafe & Greenwood, 1996, with similar carapace.

**Distribution.** Portlock Reef in the Coral Sea, at 30 m depth, and Gulf of Thailand (formerly Gulf of Siam).

### Key to species of *Styloptocuma* from Australian waters

1	Carapace and/or rest of body with spiny or serrate integument .....	2
—	Carapace and/or rest of body without spiny or serrate integument .....	8
2	Whole body with spiny integument .....	3
—	Carapace and body with a few dorsal spines .....	5
3	Carapace with 5 mediiodorsal long spines .....	<i>Styloptocuma</i> sp.
—	Carapace without mediiodorsal spines .....	<i>S. anae</i> sp. nov.
5	Carapace with more than 2 dorsal spines .....	6
—	Carapace with 2 dorsal spines .....	<i>S. halei</i> sp. nov.
6	Carapace with more than 7 dorsal spines .....	<i>S. spinosum</i> Petrescu, 2006
—	Carapace with 7 dorsal spines .....	7
7	Pereopod 1 carpus longer than propodus .....	<i>S. poorei</i> Petrescu, 2006
—	Pereopod 1 carpus shorter than propodus .....	<i>S. angelae</i> sp. nov.
8	Uropodal endopod with 6 medial setae .....	<i>S. granulosum</i> Petrescu, 2006
—	Uropodal endopod with less than 6 medial setae .....	9
9	Pereopod 2 dactylus more than twice propodus length .....	10
—	Pereopod 2 dactylus 1.66 .....	<i>S. aurorae</i> sp. nov.
10	Pereopod 2 dactylus 2.6 propodus length .....	<i>S. nodosum</i> Petrescu, 2006
—	Pereopod 2 dactylus 2 propodus length .....	<i>S. australiense</i> Petrescu, 2006

### Genus *Styloptocuma*

Băcescu & Muradian, 1974

**Diagnosis.** (After Watling, 1991). Carapace anteroventral not strongly projecting; ocular lobe, single, mid-dorsal; pseudorostral lobes usually slightly to strongly upturned, meeting in front of ocular lobe; antenna 1 peduncle article 2 with or without process; female with 3 exopods, male with 5 exopods; uropod peduncle usually as long or longer than pleonite 6, exopod much longer than its terminal seta.

**Remarks.** Five species have been recorded from Australia (Petrescu, 2006) and a further five, all new to science, are reported here.

### *Styloptocuma anae* sp. nov.

Fig. 54

**Holotype** ♀, 6.7 mm, P.90705, Australia, NSW, east of Newcastle, -33.06° 152.81°, 2632–2698 m, Menzies trawl, 8 Oct 1982, R.T. Springthorpe, W.F. Ponder, RV *Tangaroa*, U216, in AM.

**Etymology.** The species is dedicated to my daughter, Ana-Maria, with all the love of her father.

**Diagnosis.** Carapace 0.3 entire body length, densely spiny, 3 pairs of longer spines on pseudorostrum and 4 pairs in posterior extremity; pereopod 1 carpus 1.5 propodus length; pereopod 2 carpus 2nd longest article, longer than propodus and dactylus together; 1 uropod peduncle broken, other one without rami, peduncle 3.3 pleonite 6 length.

**Description.** Carapace 0.33 body length, 1.6 longer than high; upturned pseudorostrum, 0.4 carapace length; densely spiny, 4 pairs of longer spines on pseudorostrum and in

posterior extremity; anterolateral margin densely serrated; large antennal notch (Fig. 54 A). —Pereonites and pleonites with similar integument, pleonites with 1, 2, 2, 4, 3, 2 spines dorsally and 1, 1, 3, 0, 3, 0 spines ventrally. —Antenna 1 peduncle article 1 1.4 rest of article's length, serrate margins; article 2 1.4 article 3 length, with 2 pedunculate setae; main flagellum 0.7 article 3; accessory flagellum with 1 article; aesthetascs 2.3 main flagellum length (Fig. 54 B). —Maxilliped 3 basis 1.1 rest of article's length, with 2 plumose setae; basis to carpus with serrate margins; merus 3.3 ischium length, with 1 plumose seta; carpus 1.6 merus length, with 2 plumose setae; propodus as long as carpus, with 1 simple and 2 pappose setae; dactylus 0.4 propodus length, with 3 simple setae; with exopod (Fig. 54 C). —Pereopod 1 basis 0.7 rest of article's length, with serrated medially; merus 3 ischium length; carpus 2.6 merus length, with 2 simple setae; propodus 0.6 carpus length, with 1 simple seta; dactylus broken; with exopod (Fig. 54 D). —Pereopod 2 basis 0.6 rest of article's length; merus 7 ischium length; carpus 2.7 merus length, with 4 simple setae; basis to carpus serrated medially; dactylus 2.3 propodus length; with exopod (Fig. 54 E). —Pereopod 3–5 with decreasing basis and increasing carpus length; dactylus fused with terminal seta (Fig. 54 F–H). —Uropod peduncle 3.3 pleonite 6 length, with broken, missing, rami, the other peduncle, broken (Fig. 54 A).

**Remarks.** *Styloptocuma anae* sp. nov. is closely related to *Styloptocuma* sp. in its spiny integument. It differs in the: less densely spinose integument of body and appendices, shorter spines, antenna 1 with peduncle article 1 shorter, pereopod 1 with longer carpus than propodus, pereopod 2 with shorter dactylus, uropod with longer peduncle.

**Distribution.** Australia: NSW—east of Newcastle, at 2698 m depth.

### *Styloptocuma angelae* sp. nov.

Fig. 55

**Holotype** subadult ♂, 2.9 mm, P.90703, Australia, NSW, northeast of Long Reef, -33.7° 151.9°, 466 m, 19 Dec 1985, FRV *Kapala*, K85-21-06, in AM.

**Etymology.** The species is named in honour of my beloved, highly devoted wife, Angela, as a sign of eternal love and gratitude for all her care, love and sacrifice she very generously offered to me during our life together.

**Diagnosis.** Carapace 0.3 body length; with 7 mid-dorsal spines, large on frontal lobe, group of 5 mid-dorsal, 1 posterior; pereonites 3 and 4 with rows of spines, pleonite 5 with short dorsal serration towards posterior end; maxilliped 3 propodus, 2nd longest article, 1.8 dactylus length; pereopod 1 propodus, 2nd longest article, 1.1 carpus length, dactylus 0.5 propodus length; pereopod 2 carpus 2.2 merus length; dactylus 2.5 propodus length; uropodal peduncle 2.2 pleonite 6 length, 1.4 endopod length.

**Description.** Carapace 0.3 body length, 1.7 as long as high; with 7 mid-dorsal spines, large on frontal lobe, group of 5 mid-dorsal, 1 posterior; pseudorostrum lobes 0.4 carapace length, little upturned, not meeting in front of ocular lobe; long ocular lobe; large antennal notch; anterolateral margin strongly serrated (Fig. 55 A,B). —Pereonites 3 and 4 with rows of spines. Pleonite 5 with short dorsal serration towards posterior end. —Antenna 1 peduncle article 1 0.9 rest of article's length; article 2 with process and 2 pedunculate setae; article 3 tubercle, with 1 pedunculate seta; main flagellum, with 3 articles, 1.8 article; accessory flagellum with 1 article; aesthetascs 2 main flagellum length (Fig. 55 C). —Maxilliped 3 basis 0.7 rest of article's length, with 3 plumose setae; merus 2.5 ischium length, with 1 plumose seta; carpus 1.1 merus length, with 3 plumose setae; propodus 1.3 carpus length, with 1 plumose and 2 pappose setae; dactylus 0.6 propodus length, with 3 simple setae; with exopod (Fig. 55 D). —Pereopod 1 basis 0.6 rest of article's length, with 1 plumose seta; merus as long as ischium, with 1 simple seta; carpus 1.9 merus length, with 2 simple setae; propodus 1.1 carpus length, with 4 setae; dactylus 0.5 propodus length, with 5 simple setae; with exopod (Fig. 55 E). —Pereopod 2 basis 0.7 rest of article's length, with 1 plumose seta; merus 3 ischium length, with 1 simple seta; carpus 1.9 merus length, with 4 simple setae; dactylus 2.5 propodus length, with 4 simple setae; with exopod (Fig. 55 F). —Pereopods 3–5 with decreasing basis and increasing carpus length; dactylus fused with long terminal seta (Fig. 55 G). —Uropod peduncle 2.2 pleonite 6 length, 1.4 endopod length, with serrate margins; exopod, as long as endopod, with 1 terminal simple seta; endopod with serrate margin medially, 5 simple and 1 terminal seta (Fig. 55 J).

**Remarks.** *Styloptocuma angelae* sp. nov. is similar to *S. poorei* Petrescu, 2006, with a few spines on carapace and a short posterior serration on last pleonite. *Styloptocuma angelae* mainly differs in: carapace length relative to height (1.7 vs. 1.4), antenna 1 peduncle article 1 relative to rest of articles (0.9 vs. 0.7), pereopod 1 with propodus (1.1 vs. 0.8 in *S. poorei* and uropod endopod of *Styloptocuma angelae* with 5 vs. 4 setae medially in *S. poorei*).

**Distribution:** Australia: NSW—Long Reef, at 466 m depth.

### *Styloptocuma aurorae* sp. nov.

Fig. 56

**Holotype** subadult ♀, 2.92 mm, P.90707, Australia, NSW, northeast of Coffs Harbour, -30.182° 153.538°, 1000 m, baited trap, 59.2% mud, 40.8% sand, 8–9 Sep 1994, J.K. Lowry, K. Dempsey, SEAS Project, MV *Carrie Ann*, NSW-999, in AM.

**Etymology.** The species is dedicated to my colleague, Dr Aurora Stănescu, renowned specialist in Heteroptera, Head of Education Department in "Grigore Antipa" Museum, as a sign of sincere friendship.

**Diagnosis.** Carapace, 0.34 body length; short, upturned, pseudorostrum, 0.36 carapace length; maxilliped 3 carpus 1.2 merus length, propodus 1.33 carpus length; pereopod 2 merus 2.6 ischium length, dactylus 1.66 propodus length, long robust terminal seta; uropod peduncle 2.04 pleonite 6, 1.46 endopod length.

**Description.** Carapace, 0.34 body length, 1.76 as long as high, laterally compressed, 1.71 as long as wide; short, upturned, pseudorostrum 0.36 carapace length; large antennal notch; a few setulae on dorsal margin of carapace, mid-dorsal ridge; ocular lobe without lenses; smooth ventral margin (Fig. 56 A, B). —Antenna 1 peduncle article 1 0.83 rest of article's length; article 2 as long as the article 3, with process and 2 pedunculate setae; main flagellum 0.8 article 3; accessory flagellum with 1 article; aesthetascs 2 main flagellum length (Fig. 56 C). —Maxilliped 3 basis 0.48 rest of article's length, with 2 pappose and 2 plumose setae; merus 2 ischium length, with 2 pappose setae; carpus 1.2 merus length, 1 simple and 1 pappose seta; propodus 1.33 carpus length, 3 pappose setae on medial margin, 1 pappose seta on outer margin; dactylus 0.5 propodus length, with terminal seta; with exopod (Fig. 56 D). —Pereopod 1, basis 0.7 rest of article's length, with 1 simple seta; merus 2 ischium length, with 2 short simple setae; carpus 2 merus length, 2 short simple setae; propodus 0.7 carpus length, 5 simple setae; dactylus 0.6 propodus length, with 6 simple setae; with exopod (Fig. 56 E). —Pereopod 2 basis 0.9 rest of article's length; merus 2.6 ischium length, with 1 simple seta; carpus 1.69 merus length, with 4 simple setae; dactylus 1.6 propodus length, with 6 setae; with exopod (Fig. 56 F). —Pereopod 3 basis 1.11 rest of article's length, with 1 simple seta; ischium with 1 simple seta; merus 1.66 ischium length, with 1 plumose seta; carpus 2.6 merus length, with 1 simple seta; propodus 0.46 carpus length, with 1 simple seta; dactylus fused with terminal long robust seta (Fig. 56 G). —Pereopod 4 basis 1.1 rest of article's length, with 1 simple seta; merus 2 ischium length, with 1 plumose seta; carpus 2 merus length, with 1 simple seta; propodus 0.46 carpus length, with 1 simple seta; dactylus fused with terminal long robust seta (Fig. 56 H). —Pereopod 5 basis 0.6 rest of article's length, with 1 simple seta; merus 2 ischium length, with 1 simple seta; carpus 1.6 merus length, with 1 simple seta; propodus 0.46 carpus length, with 1 simple seta; dactylus fused with terminal robust seta (Fig. 56 I). —Uropod peduncle 2.04 pleonite 6, 1.5 endopod length, with 7 setae; exopod 0.8 endopod length, with 3 simple setae, terminal robust seta 0.87 exopod length; 5 robust simple setae, 1 simple seta terminally, broken, on serrated medial margin, terminal robust seta 0.46 endopod length (Fig. 56 J).

**Remarks.** *Styloptocuma aurorae* sp. nov. belongs to a group of Australian species without dorsal spines: *S. australiense*, *S. granulosum* and *S. nodosum* (all described by Petrescu, 2006). The new species has a carapace with a short pseudorostrum as in *S. granulosum*, but without a serrate ventral margin of carapace and scaly abdomen (characters present in the other two mentioned species); it has a shorter dactylus of pereopod 2 than in others, uropodal peduncle/endopod ratio 1.46 v. 1.3 or 0.8 in those previously mentioned species or 1.4 in *S. angelae* sp. nov.

**Distribution.** Australia: NSW—northeast of Coffs Harbour, at 1000 m depth.

*Styloptocuma halei* sp. nov.

Fig. 57

**Holotype** ♂, 3.22 mm, P.90704, Australia, NSW, east of Broken Bay, -33.67° 152.1°, 1108–1115 m, trawl, 19 Dec 1985, FRV *Kapala*, K85-21-05, in AM.

**Etymology.** The species is dedicated to the memory of Herbert Mathew Hale (1895–1963), former director of South Australian Museum (1928–1960), one of the most important specialists in Cumacea of all time. He described most of Cumacean taxa known from Australian waters.

**Diagnosis.** Carapace 0.24 body length, 2 mid-dorsal denticles, transverse serrate rows on pereonites 2 to 4, all pleonites with dorsal and ventral serration, 2 lateral serrate rows on first 5 segments; maxilliped 3 propodus 2nd longest article, as long as ischium to carpus together; pereopod 1 propodus 2nd longest article, 1.2 carpus length, 2.7 dactylus length; uropodal peduncle 2.7 pleonite 6 length.

**Description.** Carapace 0.24 body length, 3.4 as long as high, upturned pseudorostrum, 0.4 carapace length; 2 mid-dorsal denticles; very large antennal notch; serrate anterolateral margin (Fig. 57 A). Transverse serrate rows on pereonites 2 to 4. All pleonites with dorsal and ventral serration, 2 lateral serrate rows on pleonites 1–5. —Antenna 1 peduncle article 1 1.7 rest article's length, with 2 simple setae; article 2 with robust process with 2 pedunculate setae; main flagellum 2 article 3 length, with 3 articles; accessory flagellum with 1 article; aesthetascs 1.2 main flagellum length (Fig. 57 B). —Maxilliped 3 basis 0.5 rest of article's length, with 3 plumose setae; merus 2 ischium length, with 1 plumose seta; carpus as long as merus, with 1 plumose seta; propodus 2 carpus length, with 2 pappose setae; dactylus 0.5 propodus length, with 2 simple setae; with exopod (Fig. 57 C). —Pereopod 1 basis 0.4 rest of article's length; merus 2.5 ischium length, with 1 simple seta; carpus 2.5 merus length, with 4 simple setae; propodus 1.2 carpus length, with 3 simple setae; dactylus 0.4 propodus length, with 3 simple setae; with exopod (Fig. 57 D). —Pereopod 2 broken, carpus to dactylus are missing; with exopod (Fig. 57 E). —Pereopod 3 basis 0.5 rest of article's length; merus 1.4 ischium length; carpus 2.5 merus length, with 1 simple seta; propodus 0.5 carpus length; dactylus fused with terminal seta; with exopod (Fig. 57 F). —Pereopod 4 basis 0.9 rest of article's length; merus 1.25 ischium length; carpus 3 merus length; propodus 0.6 carpus length; dactylus fused with terminal seta; with exopod (Fig. 57 G). —Pereopod 5 incompletely developed, with only 4 articles; basis 1.5 rest of article's length; article 4 with 2 terminal setae (Fig. 57 H).

H). —Uropod peduncle 2.7 pleonite 6th length, with 5 setae medially, rami with broken tips (Fig. 57 I).

**Remarks.** *Styloptocuma halei* sp. nov. is similar to *S. spinosum* Petrescu, 2006 from Australian waters and several others from the Atlantic Ocean described by Băcescu & Muradian (1974) and by Jones (1984) with dorsal teeth on the carapace and remaining body, more like *S. erecta* (Jones). It differs with: carapace having fewer dorsal teeth (two vs. five in *S. erecta*) and two serrate lateral rows on pleon instead of one in *S. erecta* missing in *S. spinosum*). The pereopod 2 aspect could aberrant, possibly being regenerated.

**Distribution.** Australia: NSW—east of Broken Bay, at 1108–1115 m depth.

*Styloptocuma* sp.

Fig. 58

**Material examined:** 1 manca, 4.25 mm, P.90706, Australia, NSW, northeast of Coffs Harbour, -30.216° 153.487°, 400 m, baited trap, 9–10 Sep 1994, J.K. Lowry, K. Dempsey, SEAS Project, MV *Carrie Ann*, NSW-1014, in AM.

**Diagnosis.** Carapace 0.3 of entire length, integument of the whole body and appendages densely beset with small spines, pereonites 4 and 5 with long dorsal spines, pleonites with several dorsal spines; propodus of 3rd maxilliped 2nd longest article, 1.4 dactylus length; carpus and propodus of 1st pereopod, subequal; dactylus of 2nd pereopod as long as carpus and propodus together; uropod peduncle 1.9 pleonite 6 length, as long as endopod.

**Description.** Carapace 0.3 of entire length, 3 as long as high; long upturned pseudorostrum; no antennal notch; integument of the whole body and appendages densely beset with small spines, 2 dorsal rows of 3 longer spines each, median lateral row of 3 longer spines, other row close to posterolateral margin of 5 spines; anterolateral margin with long serration, other longer spines on posterior elevation (Fig. 58 A, B). —Pereonites 4 and 5 with long dorsal spines. —Pleonites also with several dorsal longer spines. —Antenna 1 peduncle article 1 2.25 rest of article's length, highly serrated; article 2 1.3 article 3 length; main flagellum 0.5 article 3 length; accessory flagellum with 1 article; aesthetascs 4.8 main flagellum length (Fig. 58 C). —Maxilliped 3 basis 0.8 rest of article's length, serrate medially, with 3 plumose setae; merus 2 ischium length, with 1 plumose seta; carpus 1.25 merus length, with 1 plumose seta; propodus 1.5 carpus length, with 2 pappose setae; dactylus 0.7 propodus length, with 4 simple setae; with exopod (Fig. 58 D). —Pereopod 1 basis 0.38 of entire length; merus 2.1 ischium length; carpus 1.7 merus length, as long as propodus; propodus with 1 simple seta; dactylus 0.4 propodus length, with 5 simple setae; with exopod (Fig. 58 E). —Pereopod 2 densely beset with small spines, basis 0.7 rest of article's length, with 6 robust long setae; merus 3.6 ischium length; carpus 3.3 merus length, with 2 simple setae; dactylus 4.7 propodus length, with 5 simple setae; with exopod (Fig. 58 F). —Pereopods 3, 4 with serrate basis to carpus, with decreasing basis and increasing carpus length; dactylus fused with terminal simple seta (Fig. 58 G–H). —Pereopod 5 very short, with single article, incompletely developed (Fig. 58 A). —Uropod peduncle 1.9 pleonite 6 length, as long as endopod, 5 longer robust setae

interspersed with shorter setae medially, 3 lateral longitudinal rows, serrated margins; exopod 0.9 endopod length, with serrate margins and lateral longitudinal serrate row; endopod with serrate margins, 2 serrate longitudinal rows, 4 lateral and 6 setae medially, terminal robust seta, broken (Fig. 58 I).

**Remarks.** *Styloptocuma* sp. is related to another Australian species, *S. anae* sp. nov., also with a spiny integument, but with fewer stronger spines. *Styloptocuma* sp. is more closely related to an Atlantic species (Mauritanian coast), *S. dumitrumurariui* Petrescu, 2007, both with long spines on the body and appendages densely beset with smaller ones. Much longer spines and setae are present on the Australian species, pereopod 1 with carpus and propodus subequal vs. longer propodus, pereopod 2 with shorter dactylus, pereopod 4 with shorter carpus, uropod with shorter peduncle, 1.9 pleonite 6 length vs. 6 longer in *S. dumitrumurariui*, with more serrate rows and longer setae on peduncle and rami.

**Distribution.** Australia: NSW—northeast of Coffs Harbour, at 400 m depth.

## Genus *Vemacumella* Petrescu, 2001

**Diagnosis.** Carapace with dorsal spines; antenna 1 peduncle article 2 with process; accessory flagellum with 2 or 3 articles; ocular lobe not reaching tip of pseudorostrum lobes, eyeless; uropod peduncle 1.7 pleonite 6 length, peduncle 1.3 endopod length, exopod 0.85–0.90 endopod length, endopod with 4, 5 setae.

### *Vemacumella bacescui* Petrescu, 2006

*Vemacumella bacescui* Petrescu, 2006: 170–171, figs 65–66.

**Material examined:** 1♀, P.64738.

**Distribution.** Australia: NSW—off Nowra, and TAS—off Freycinet Peninsula, at 400–770 m depth (Petrescu, 2006). The species is now known from greater depths on the continental slope of eastern Australia, at 914 m east of Broken Bay, NSW.

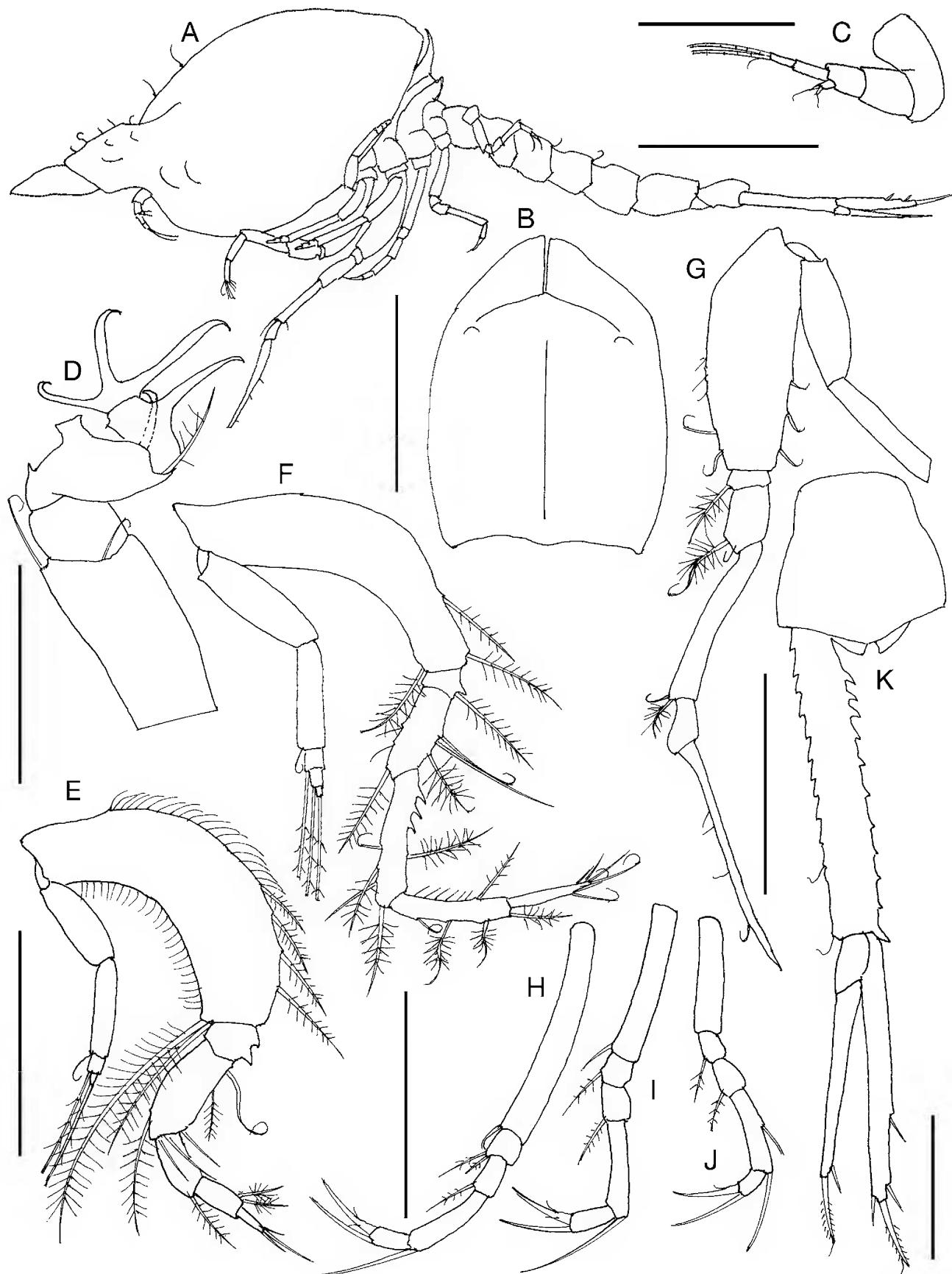


Figure 1. *Campylaspides stanescui* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A,B 1 mm; C,K 0.25 mm; D,J 0.5 mm.

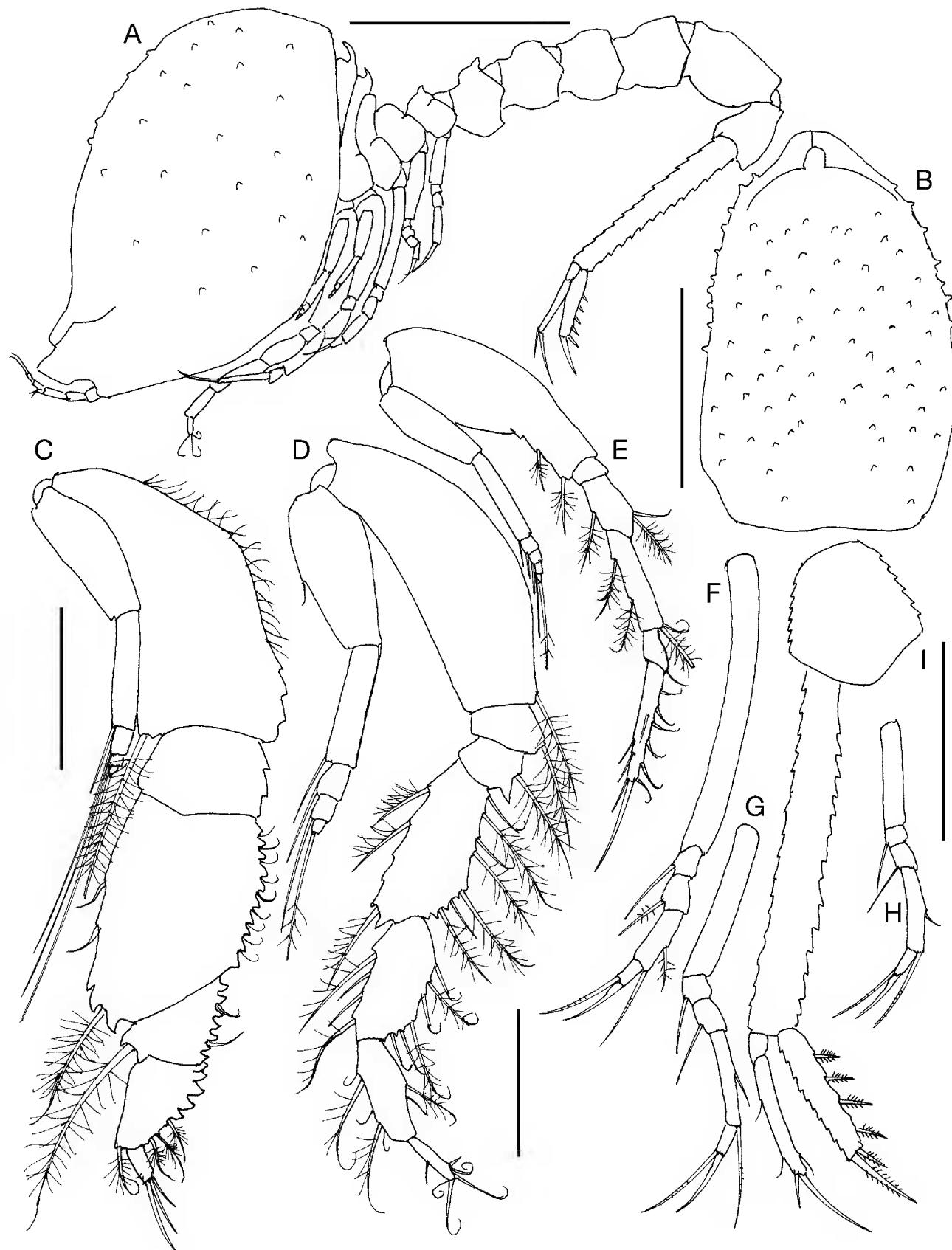


Figure 2. *Campylaspis adami* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 3; (G) pereopod 4; (H) pereopod 5; (I) uropod. Scales: A,B 1 mm; C 0.25 mm; D 0.5 mm; E-I 0.5 mm.

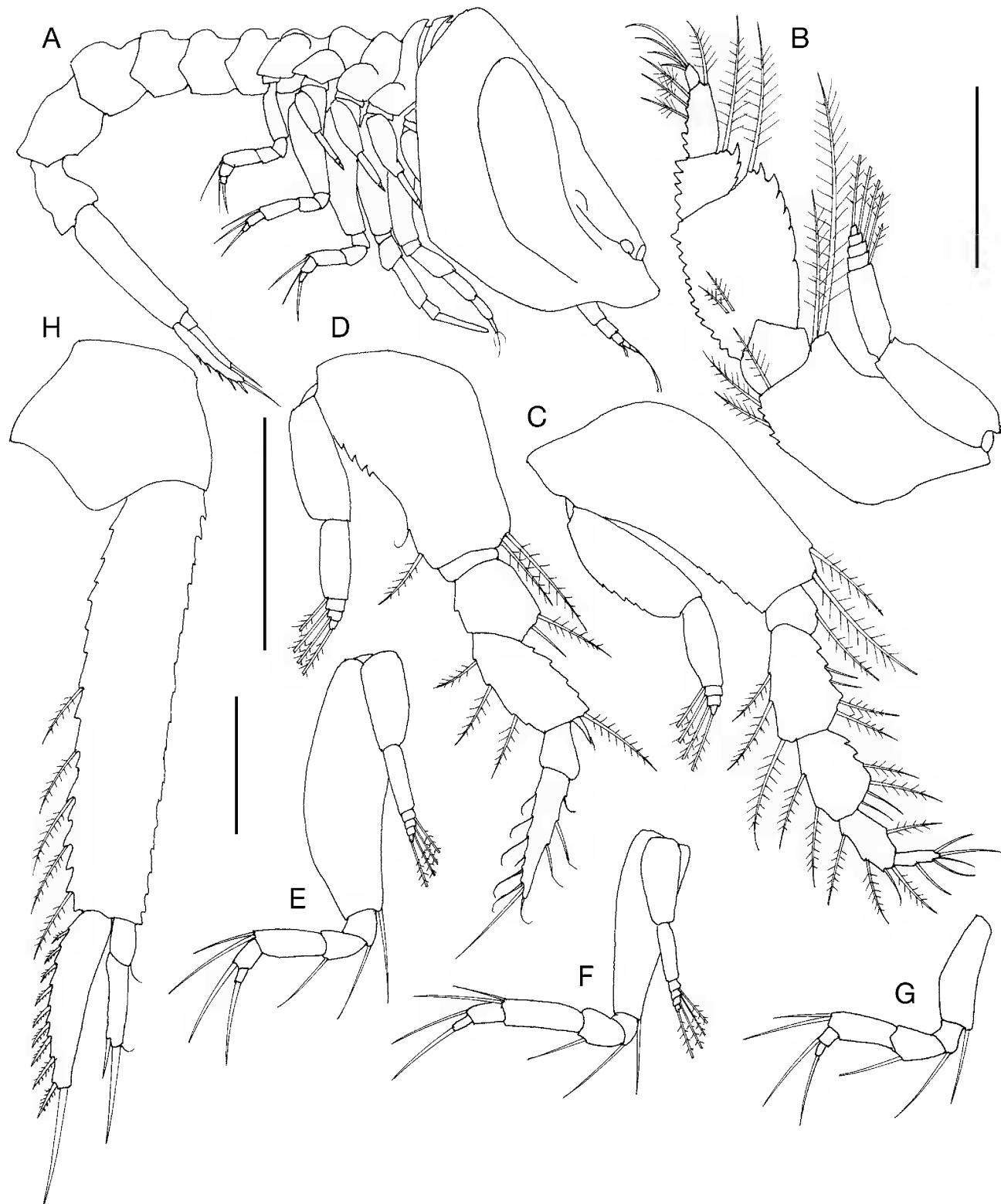


Figure 3. *Campylaspis adelae* sp. nov. Holotype male (A) body, lateral view; (B) maxilliped 3; (C) pereopod 1; (D) pereopod 2; (E) pereopod 3; (F) pereopod 4; (G) pereopod 5; (H) uropod. Scales: A 1 mm; B–D 0.3 mm; E–G 0.3 mm.

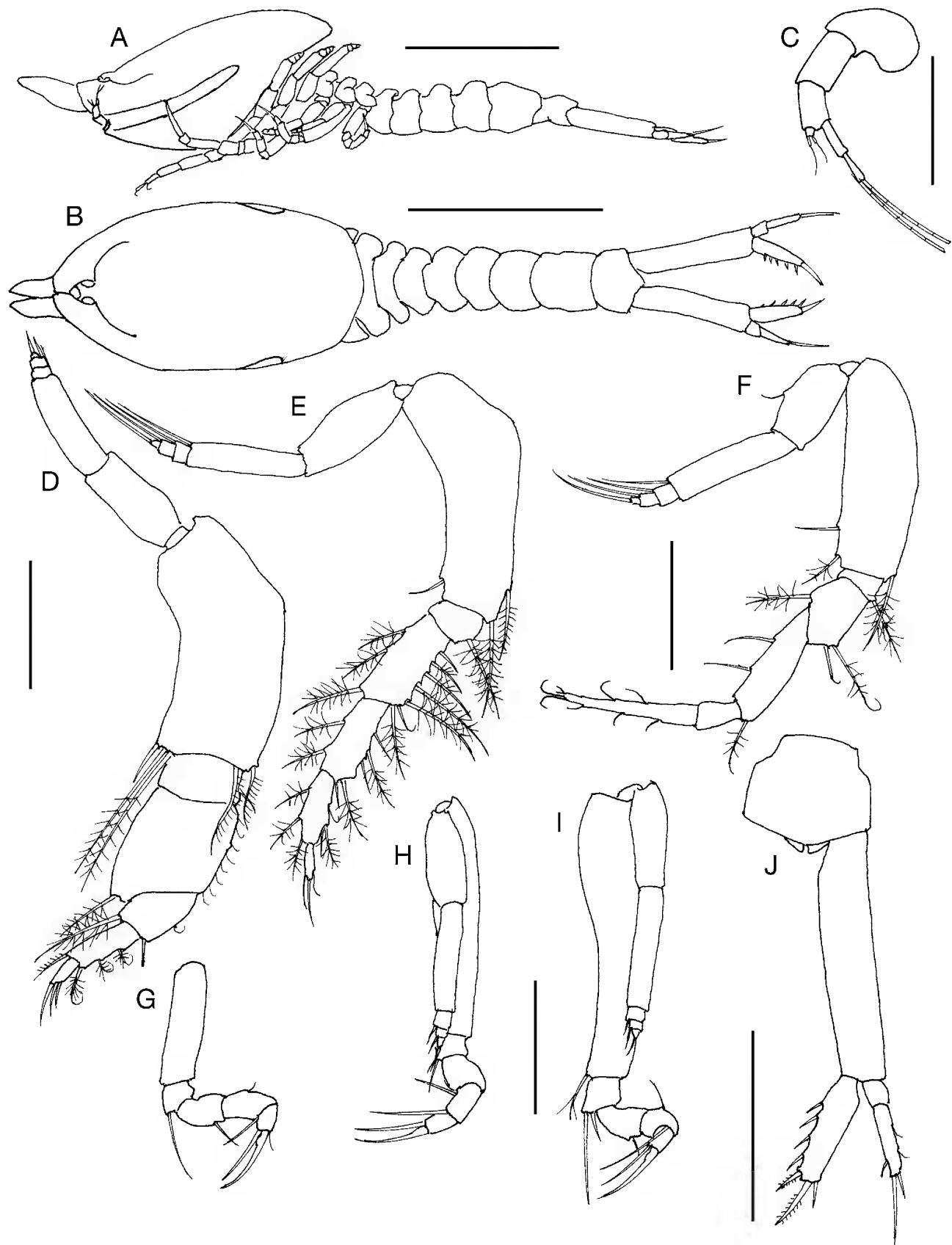


Figure 4. *Campylaspis aureliani* sp. nov. Holotype subadult male. (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 0.5 mm; C 0.2 mm; D-I 0.25 mm; J 0.5 mm.

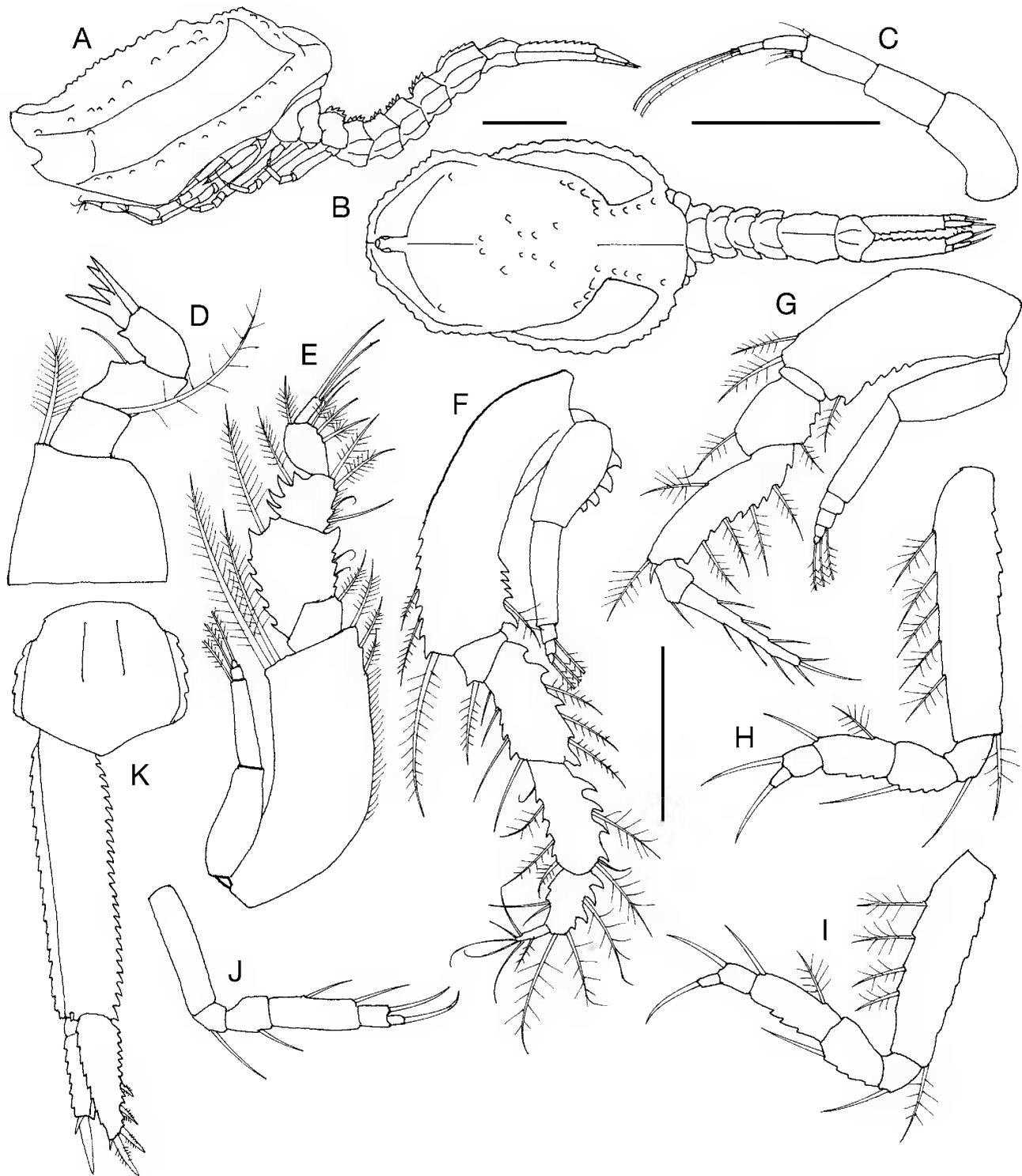


Figure 5. *Campylaspis berentsae* sp. nov. Paratype female (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A,B 1 mm; C,D 0.3 mm; E-K 0.5 mm.

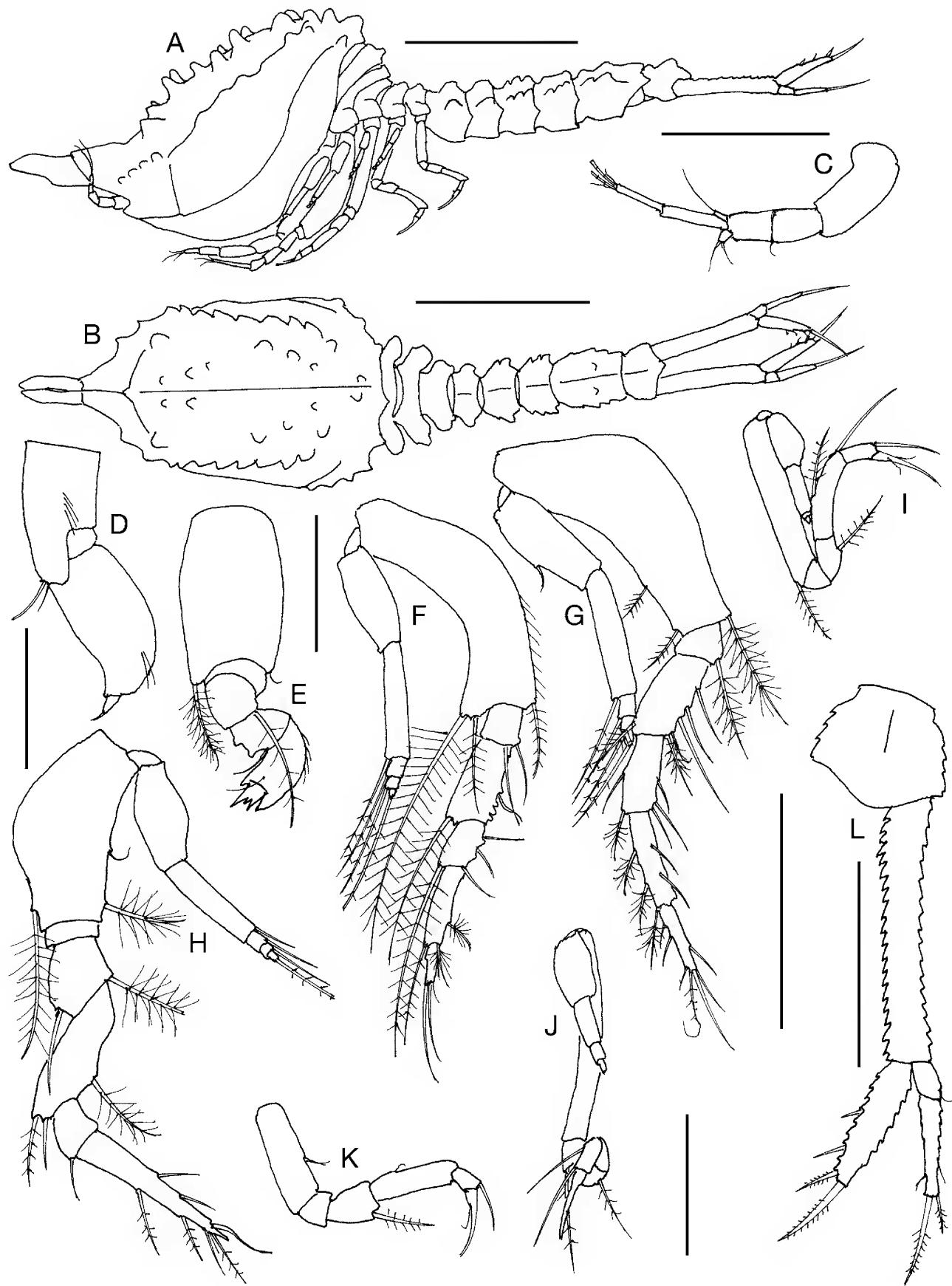


Figure 6. *Campylaspis chisamerai* sp. nov. Holotype subadult male (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 1; (E) maxilliped 2; (F) maxilliped 3; (G) pereopod 1; (H) pereopod 2; (I) pereopod 3; (J) pereopod 4; (K) pereopod 5; (L) uropod. Scales: A,B 1 mm; C 0.2 mm; D,E 0.25 mm; F–L 0.5 mm.

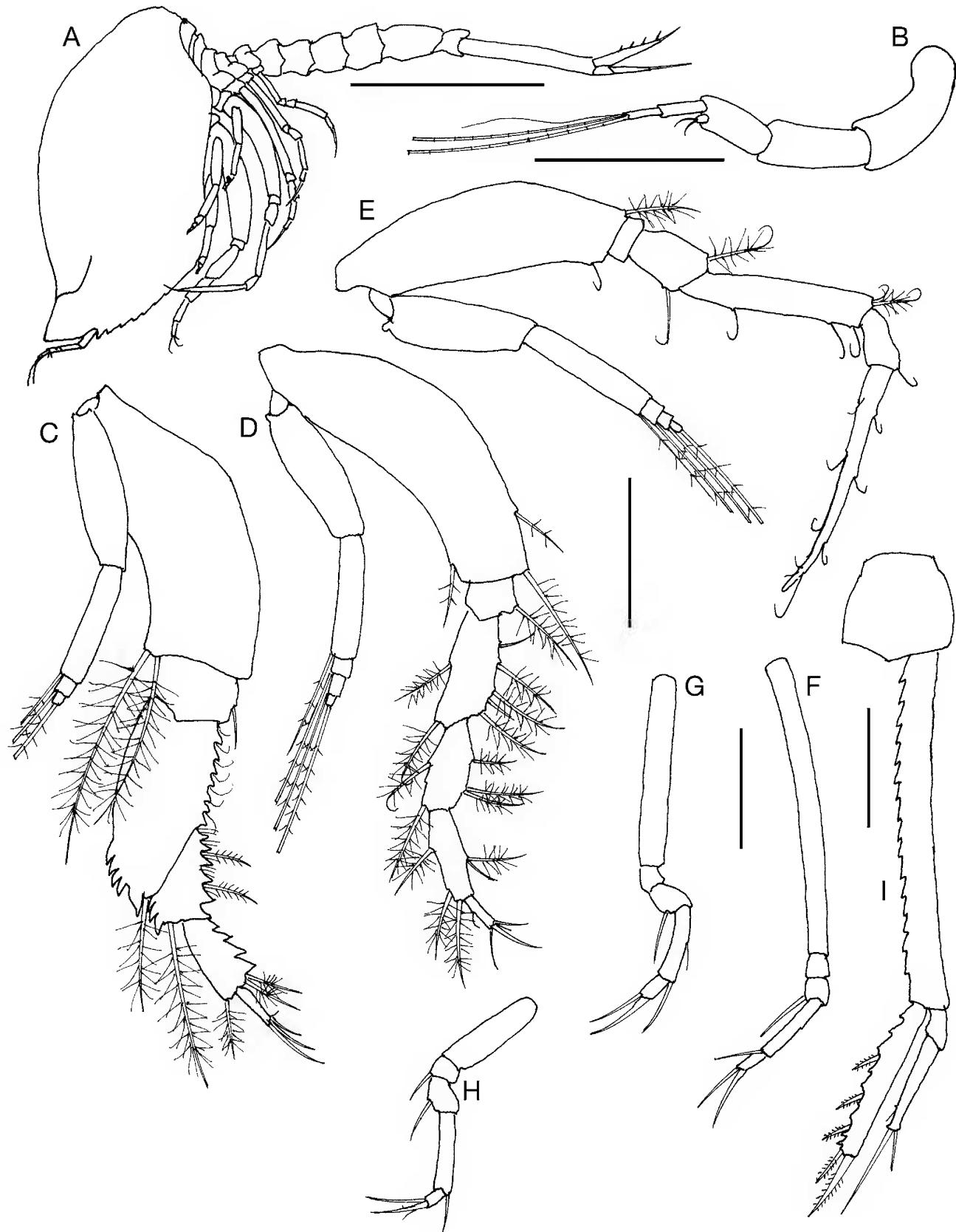


Figure 7. *Campylaspis cursaruae* sp. nov. Holotype female (A) body, lateral view; (B) antenna 1; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 3; (G) pereopod 4; (H) pereopod 5; (I) uropod. Scales: A 1 mm; B 0.2 mm; C–I 0.25 mm.

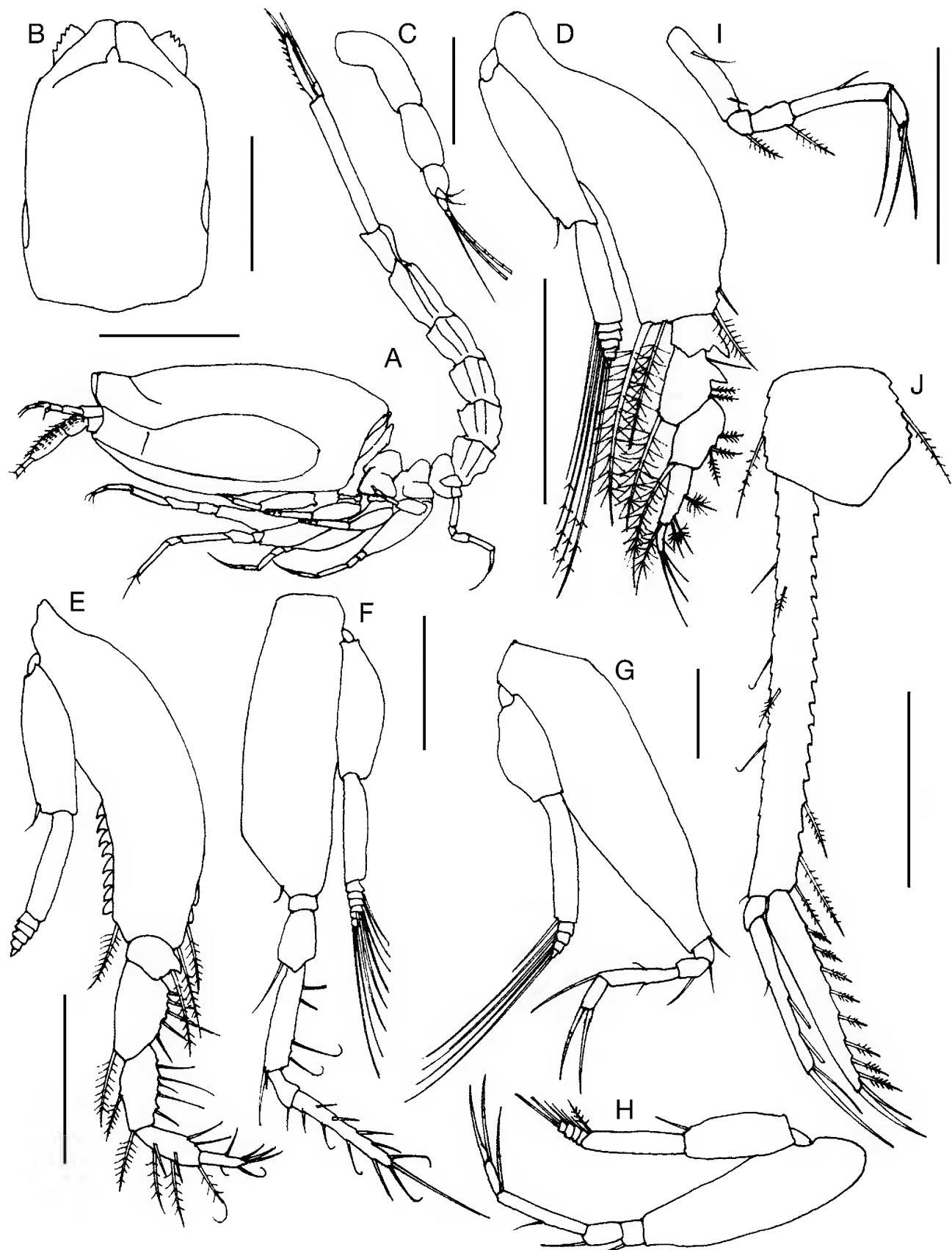


Figure 8. *Campylaspis dumitrumurariui* sp. nov. Holotype male (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 1 mm; C,I 0.5 mm; D 0.5 mm; E 0.5 mm; F 0.5 mm; G 0.25 mm; H 0.5 mm; J 0.5 mm.

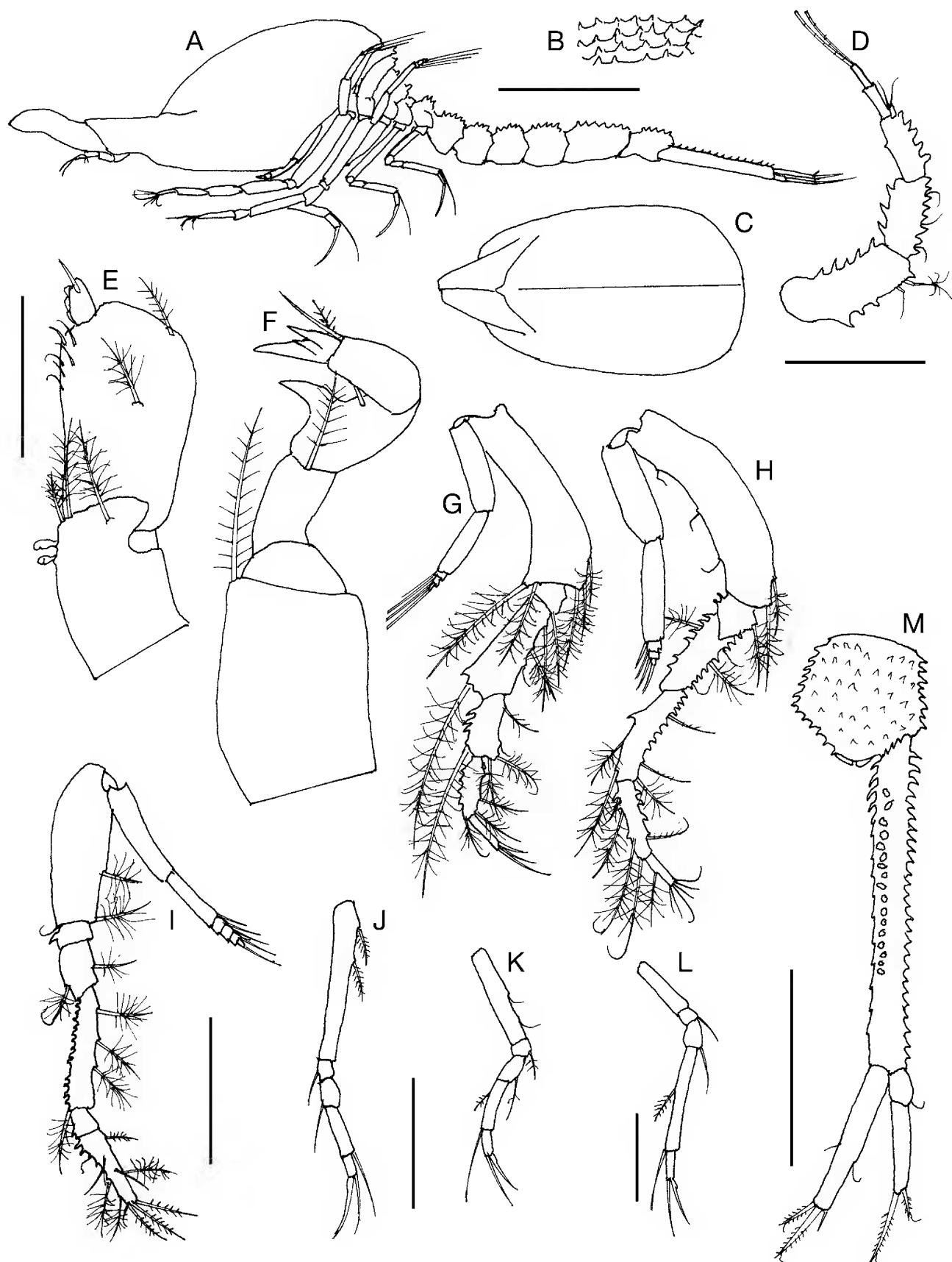


Figure 9. *Campylaspis elenaiomuti* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) detail of carapace integument; (D) antenna 1; (E) maxilliped 1; (F) maxilliped 2; (G) maxilliped 3; (H) pereopod 1; (I) pereopod 2; (J) pereopod 3; (K) pereopod 4; (L) pereopod 5; (M) uropod. Scales: A,B 1 mm; D 0.25 mm; E–K,M 0.5 mm; L 0.5 mm.

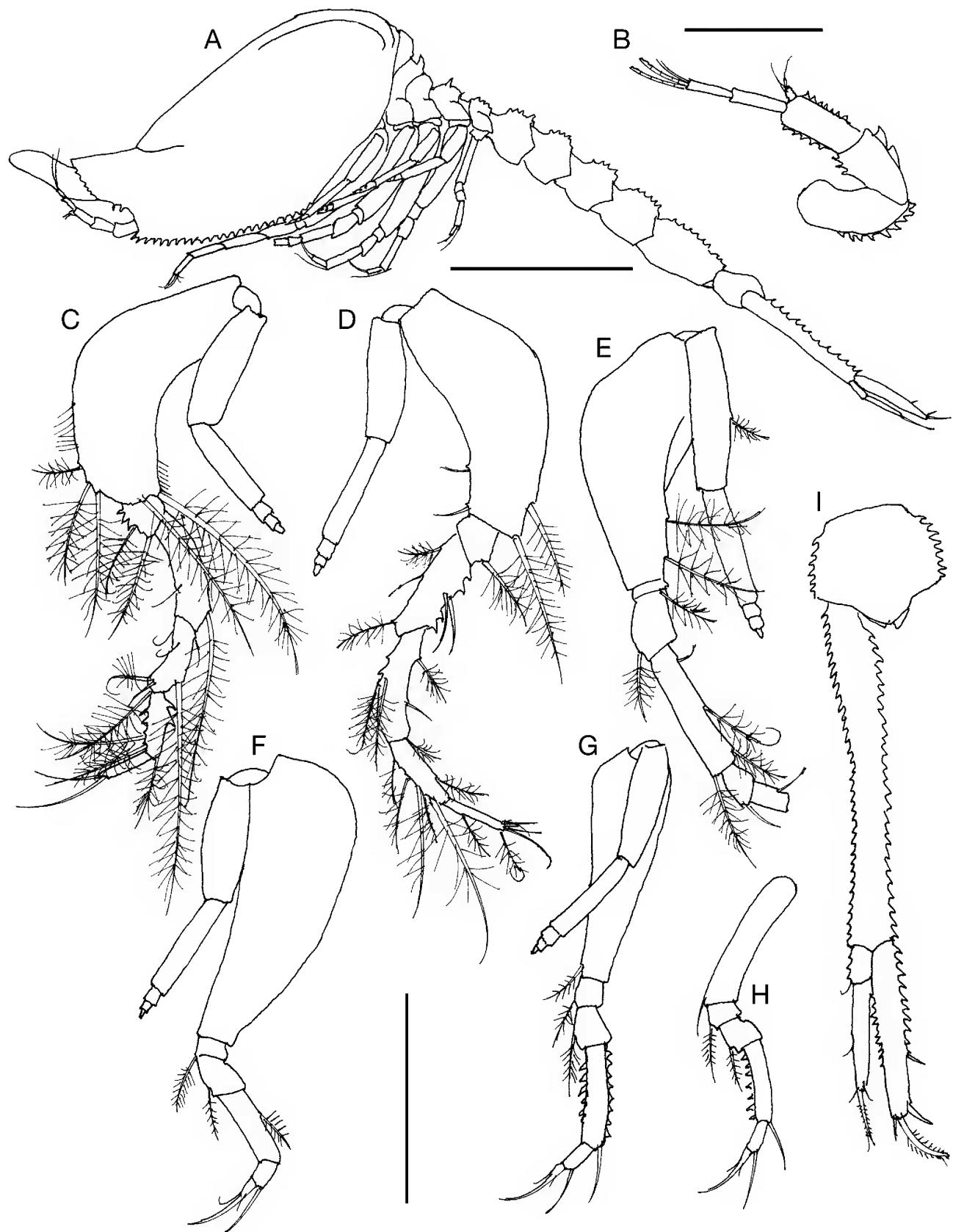


Figure 10. *Campylaspis elenaiomuti* sp. nov. Paratype male (A) body, lateral view; (B) antenna 1; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 3; (G) pereopod 4; (H) pereopod 5; (I) uropod. Scales: A 1 mm; B 0.25 mm; C-I 0.5 mm.

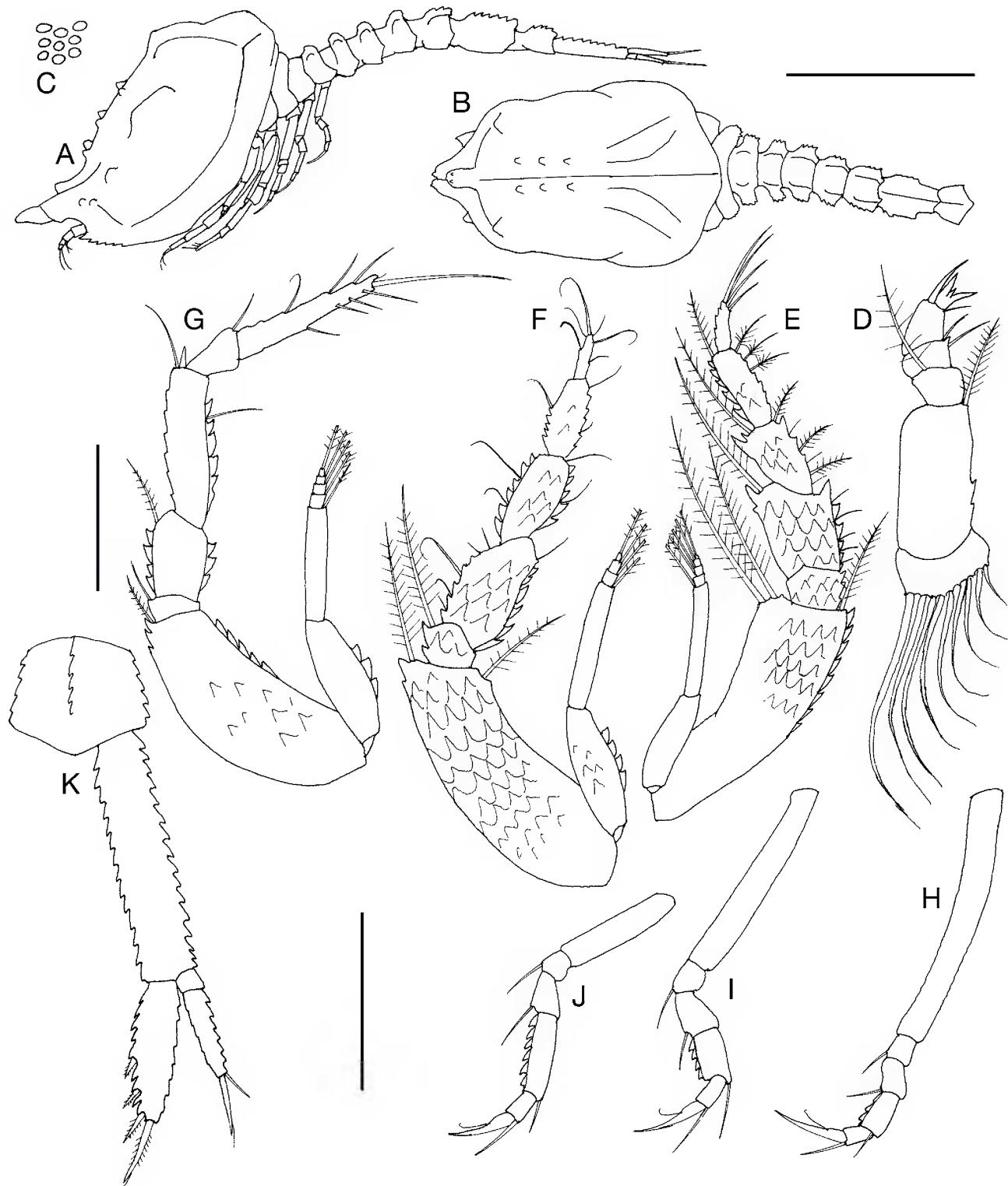


Figure 11. *Campylaspis gabrielamircea* sp. nov. Paratype female (A) body, lateral view; (B) body, dorsal view; (C) maxilliped 2; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 1 mm; C-F 0.2 mm; G-J 0.3 mm.

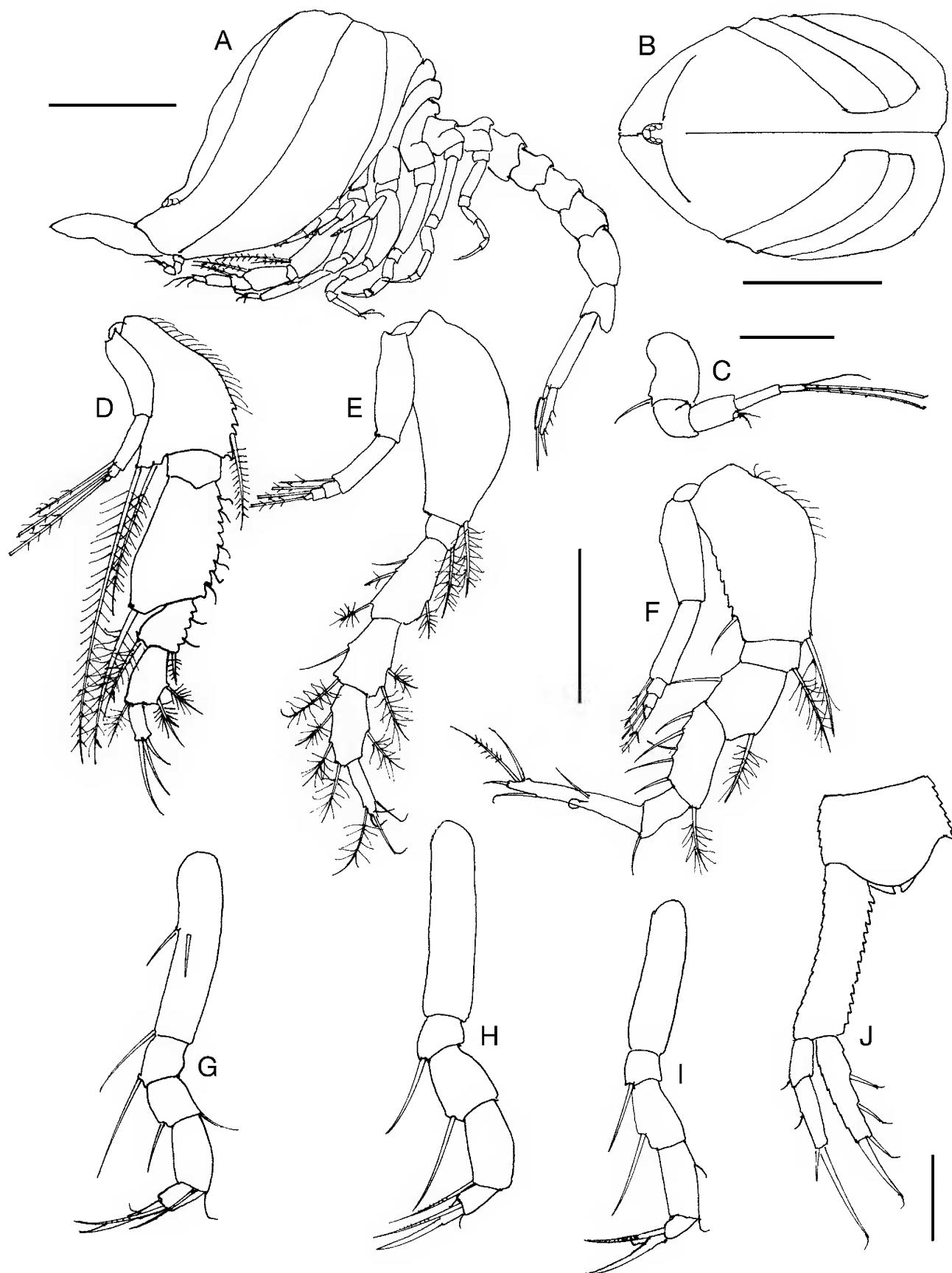


Figure 12. *Campylaspis georgetae* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 0.5 mm; C 0.1 mm; D–J 0.1 mm.

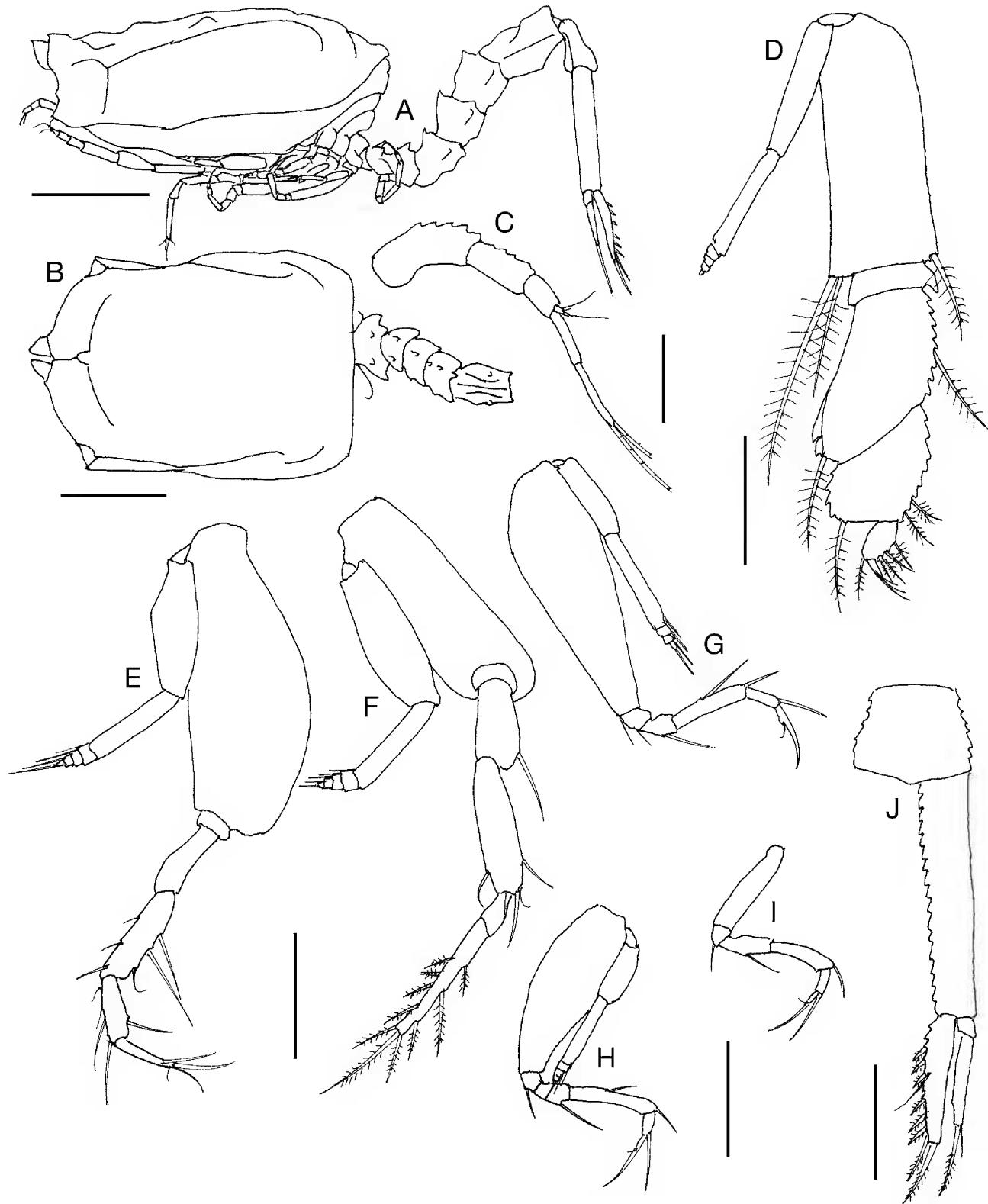


Figure 13. *Campylaspis gherasimi* sp. nov. Holotype subadult male (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 1 mm; C 0.25; D–J 0.5 mm.

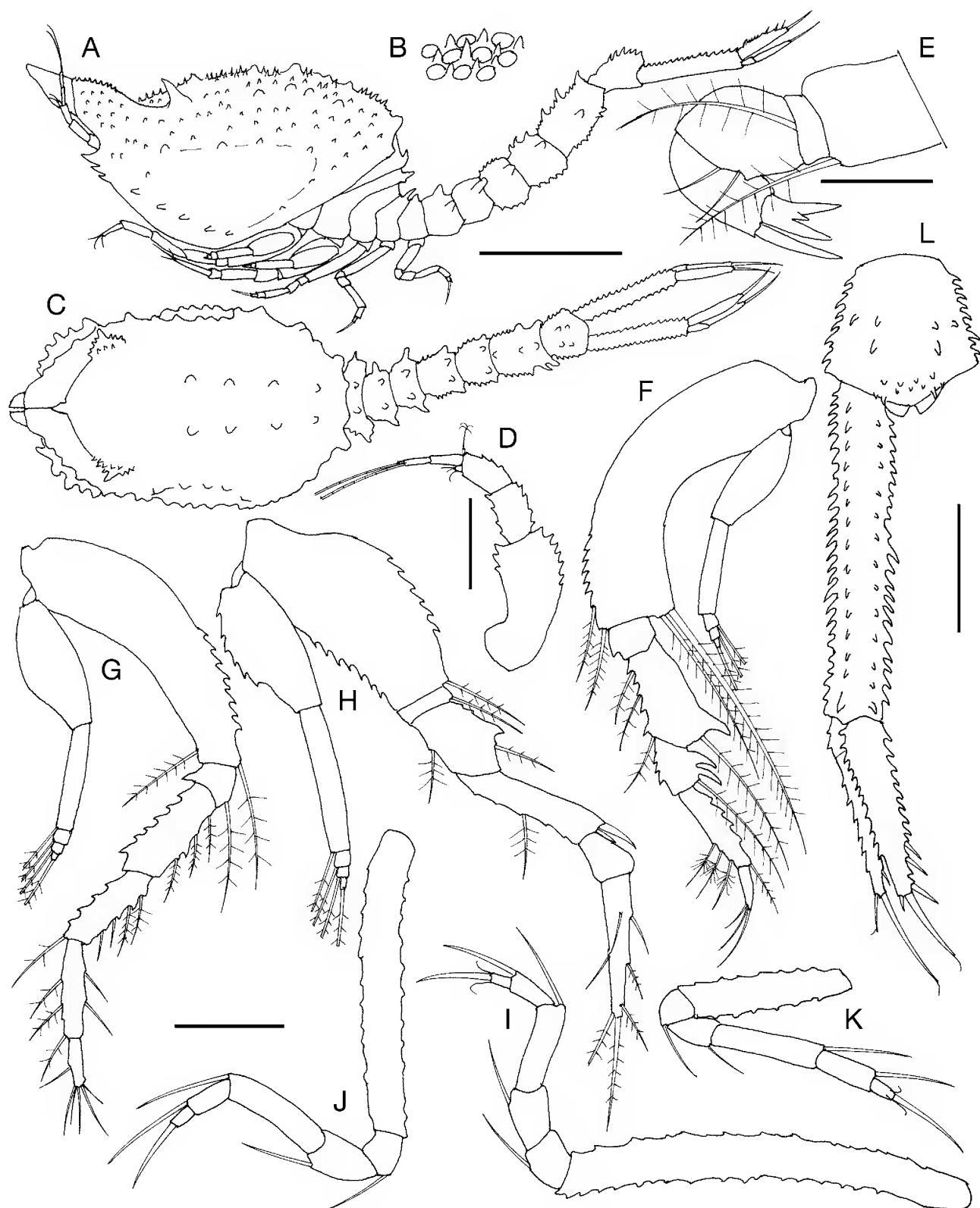


Figure 14. *Campylaspis guerragarciae* sp. nov. Paratype female (A) body, lateral view; (B) body, dorsal view; (C) carapace integument, detail; (D) antenna 1; (E) maxilliped 2; (F) maxilliped 3; (G) pereopod 1; (H) pereopod 2; (I) pereopod 3; (J) pereopod 4; (K) pereopod 5; (L) uropod. Scales: A,B 1 mm; D 0.2 mm; E 0.1 mm; F–H,L 0.3 mm; I–K 0.2 mm.

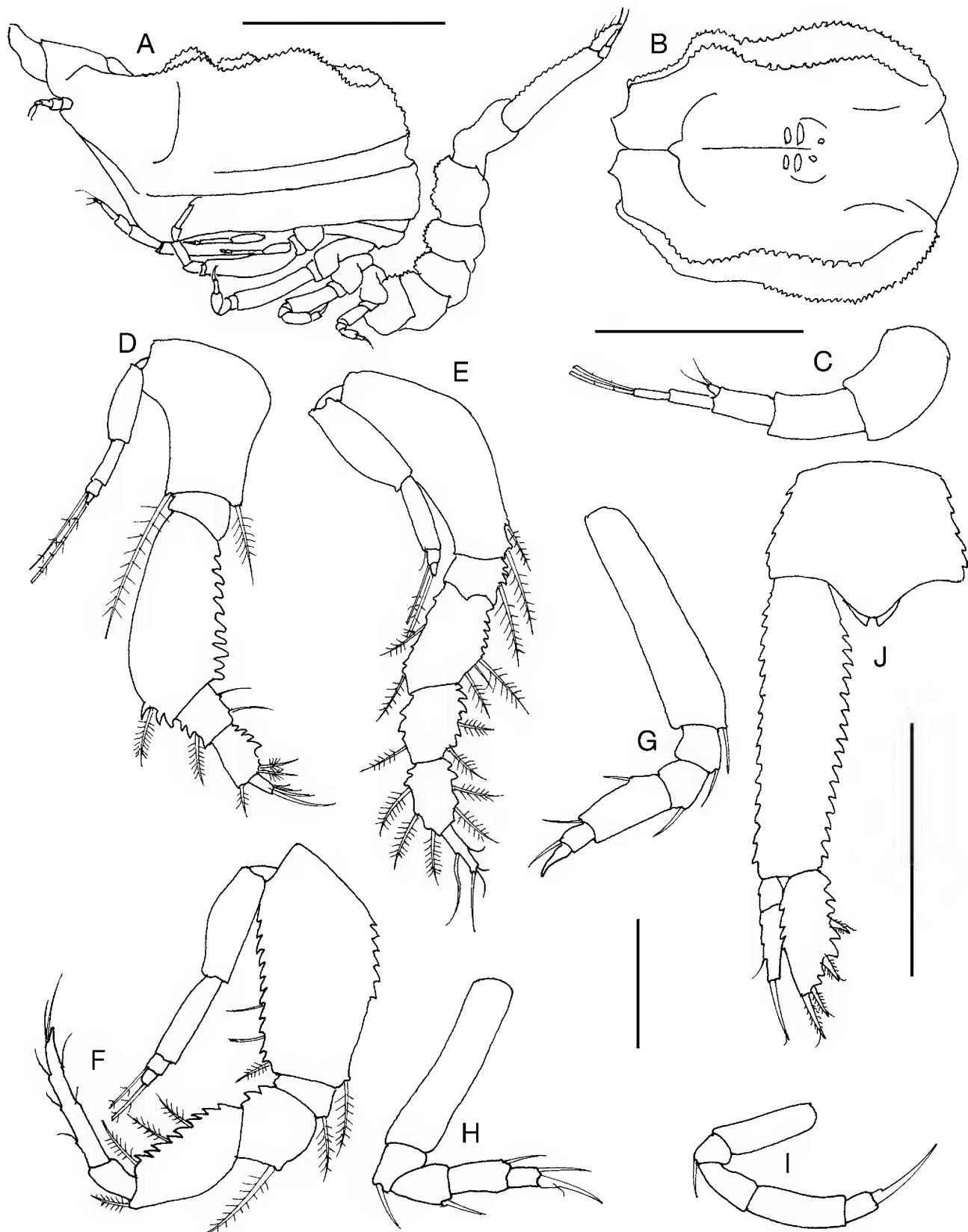


Figure 15. *Campylaspis hangiuae* sp. nov. Holotype female. (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 1 mm; C 0.25 mm; D–J 0.25 mm.

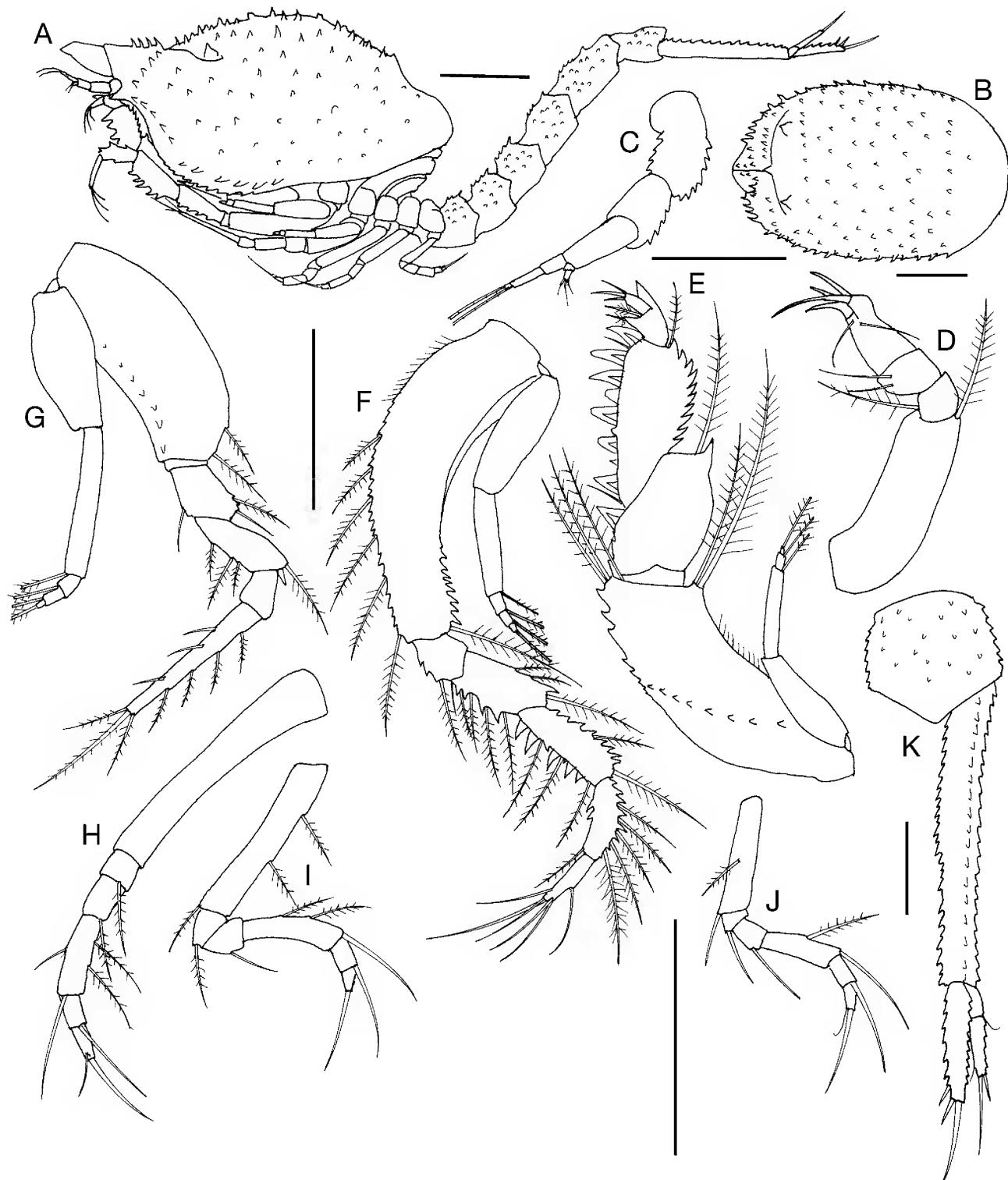


Figure 16. *Campylaspis heardi* sp. nov. Paratype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A, 1 mm; B 1 mm; C 0.3 mm; D-G 1 mm; H-J 1 mm.

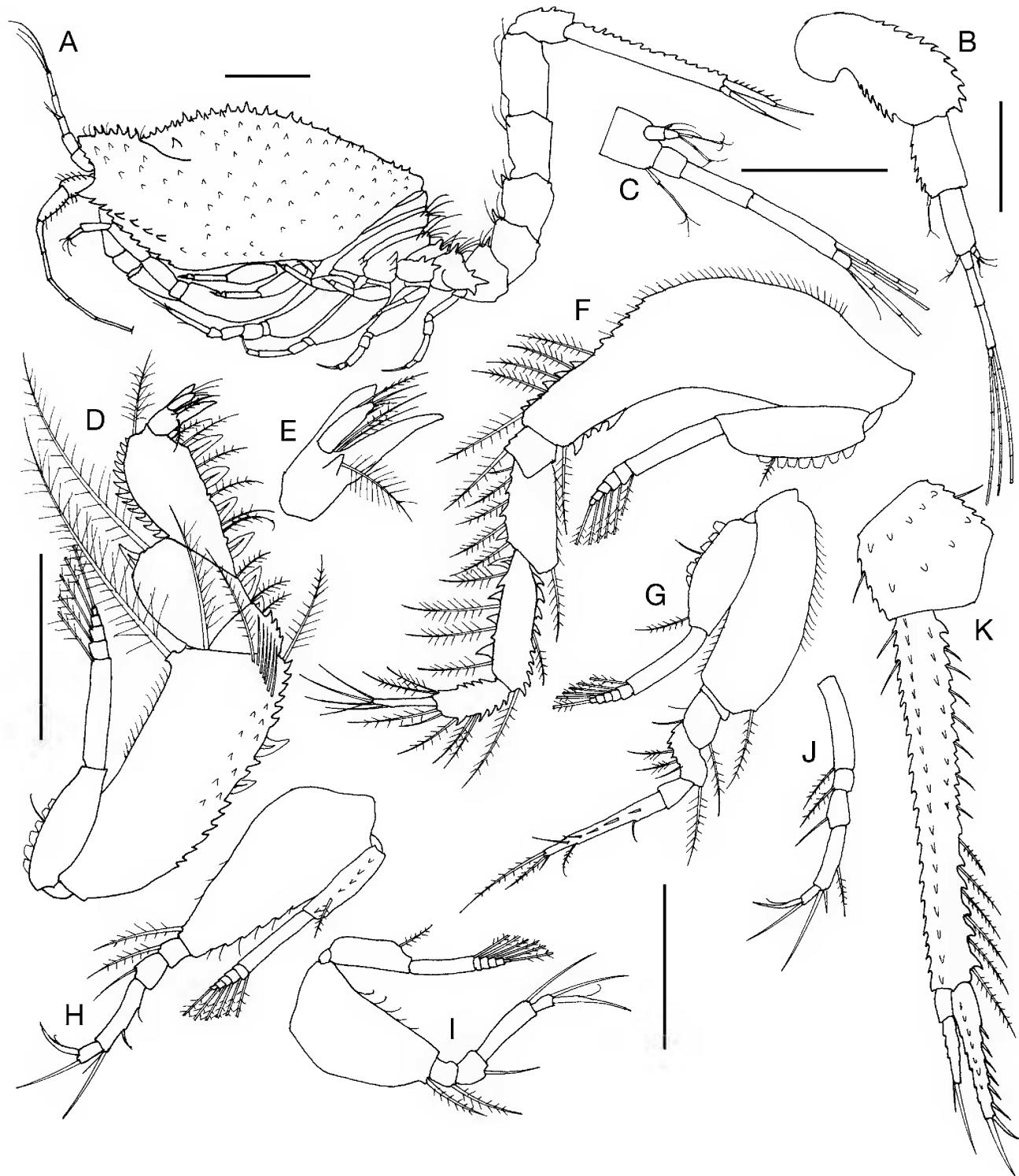


Figure 17. *Campylaspis heardi* sp. nov. Paratype male (A) body, lateral view; (B) antenna 1; (C) antenna 1, detail; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 1 mm; B 0.3 mm; C 0.2 mm; D, E 1 mm; F–J 1 mm.

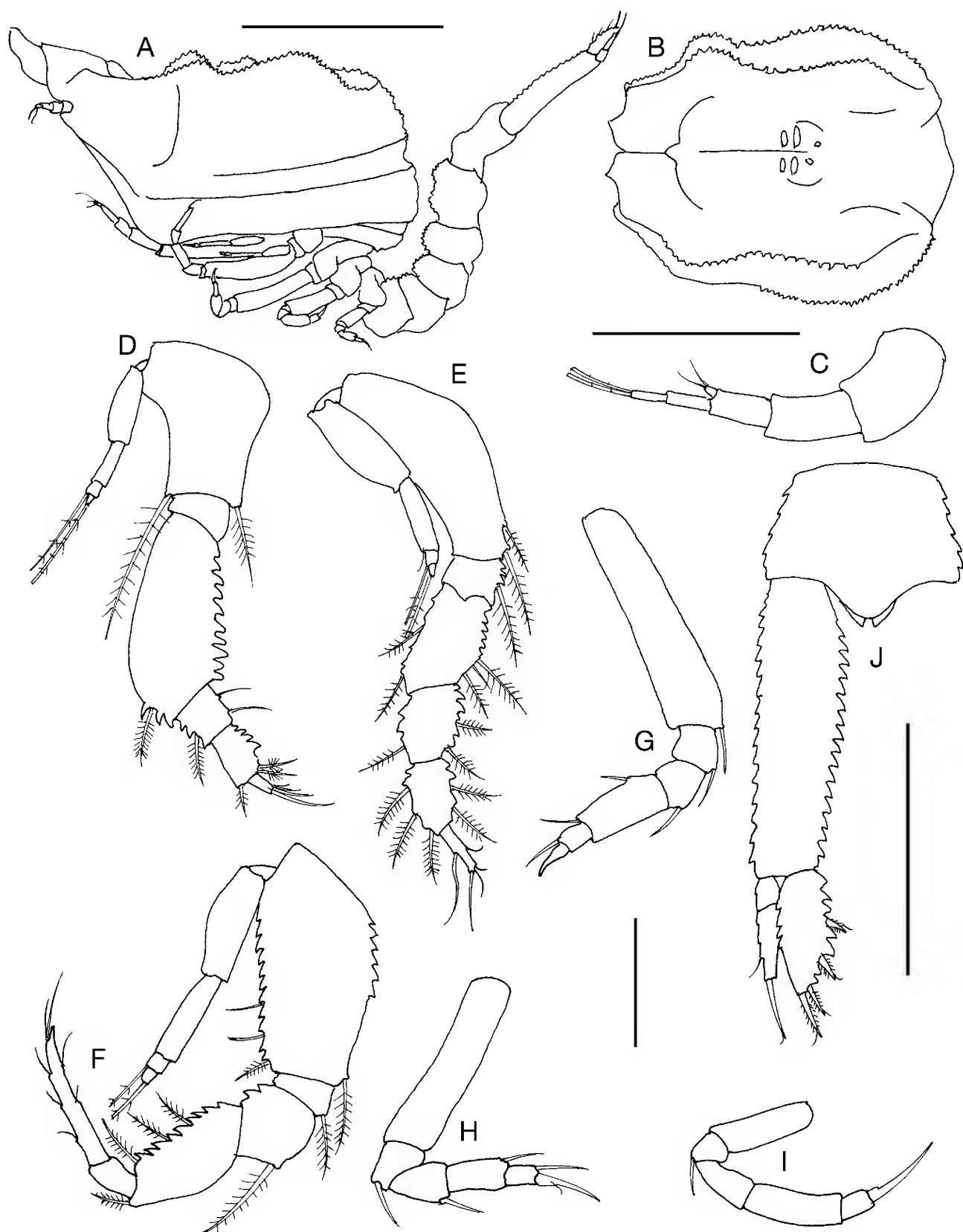


Figure 18. *Campylaspis keablei* sp. nov. Holotype subadult male (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 1 mm; B 0.5 mm; C-J 0.5 mm.



Figure 19. *Campylaspis latidactyla* Hale, 1945 Male (A) lateral view; (B) carapace, dorsal view; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 2 dactylus, detail; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 0.5 mm; C-E,G-I 0.2 mm; F, 0.1 mm; J 0.25 mm.

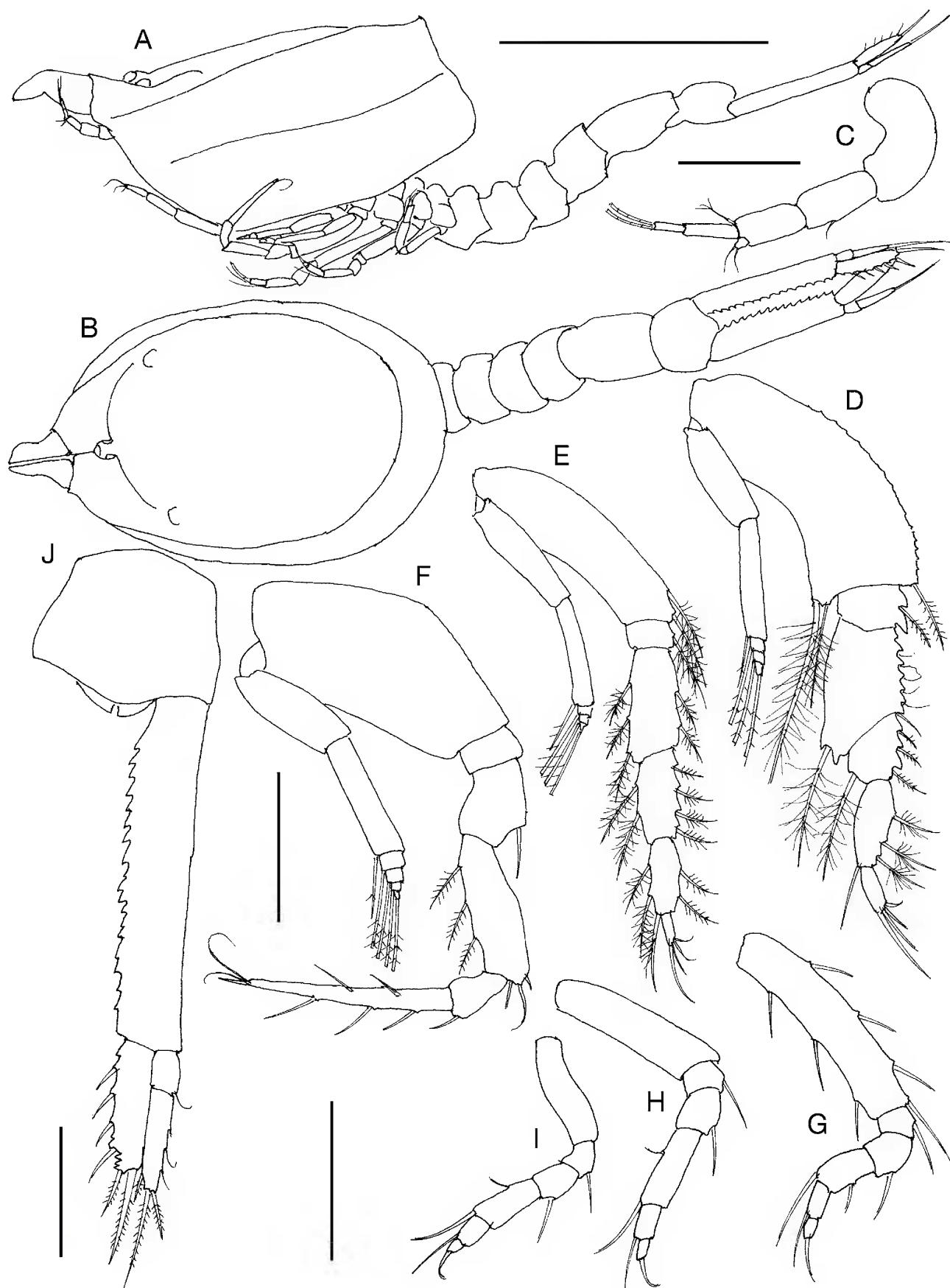


Figure 20. *Campylaspis lowryi* sp. nov. Holotype female (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 1 mm; B-H 0.3 mm.

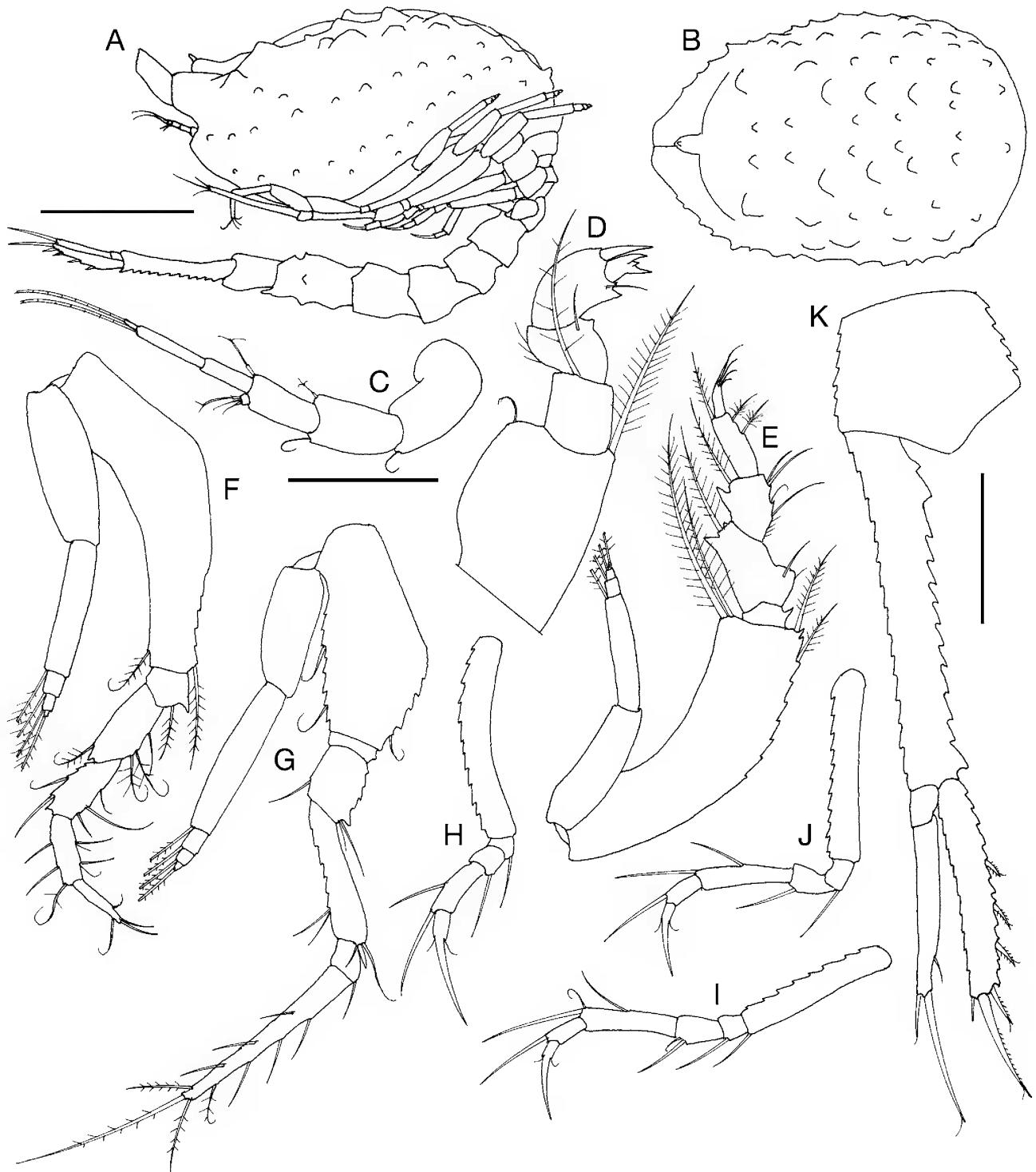


Figure 21. *Campylaspis marinescui* sp. nov. Paratype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A, B 1 mm; C, D 0.2 mm; E-K 0.3 mm.

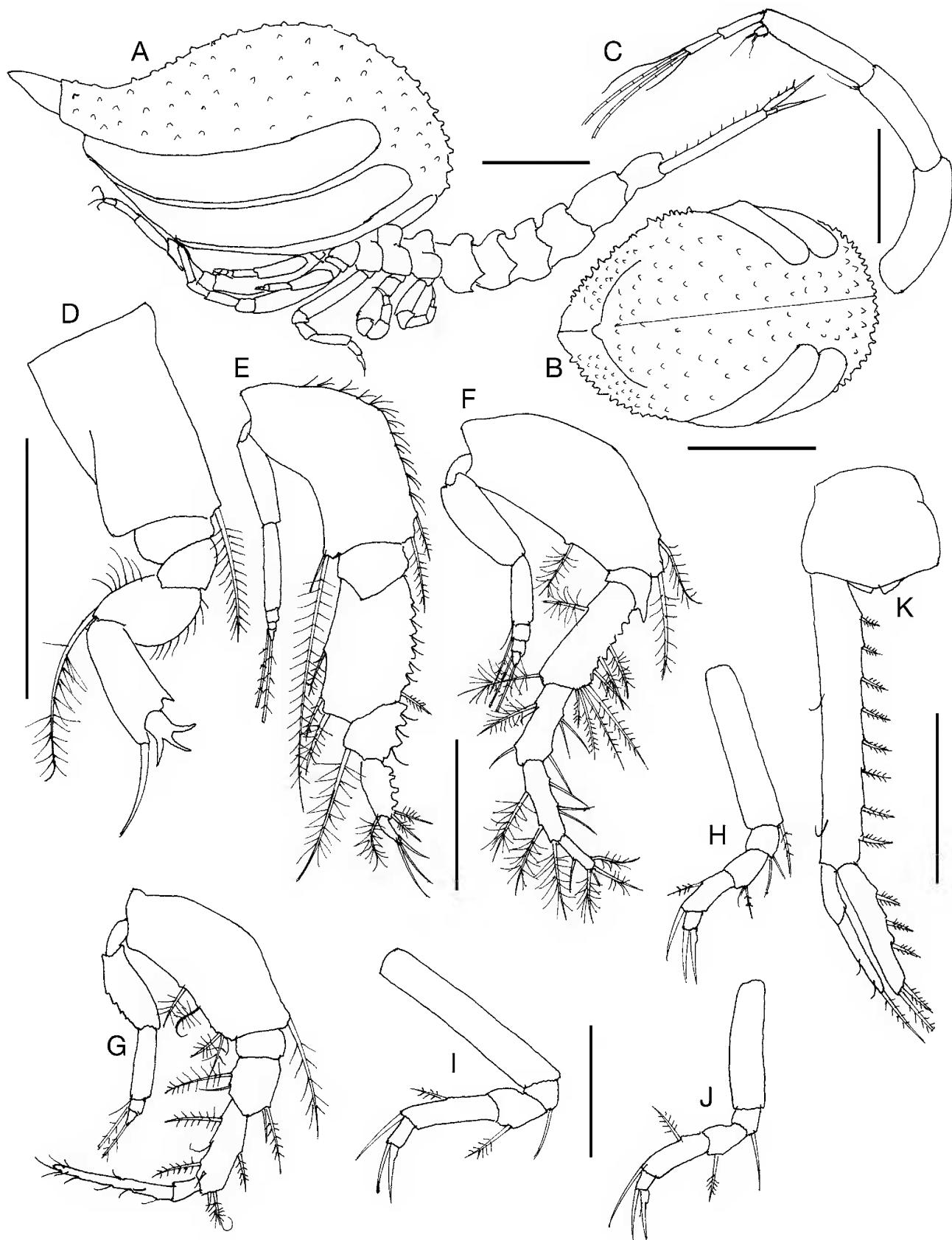


Figure 22. *Campylaspis matacheae* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A, B 1 mm; C 0.5 mm; D 0.5 mm; E-J 0.5; K 1 mm.

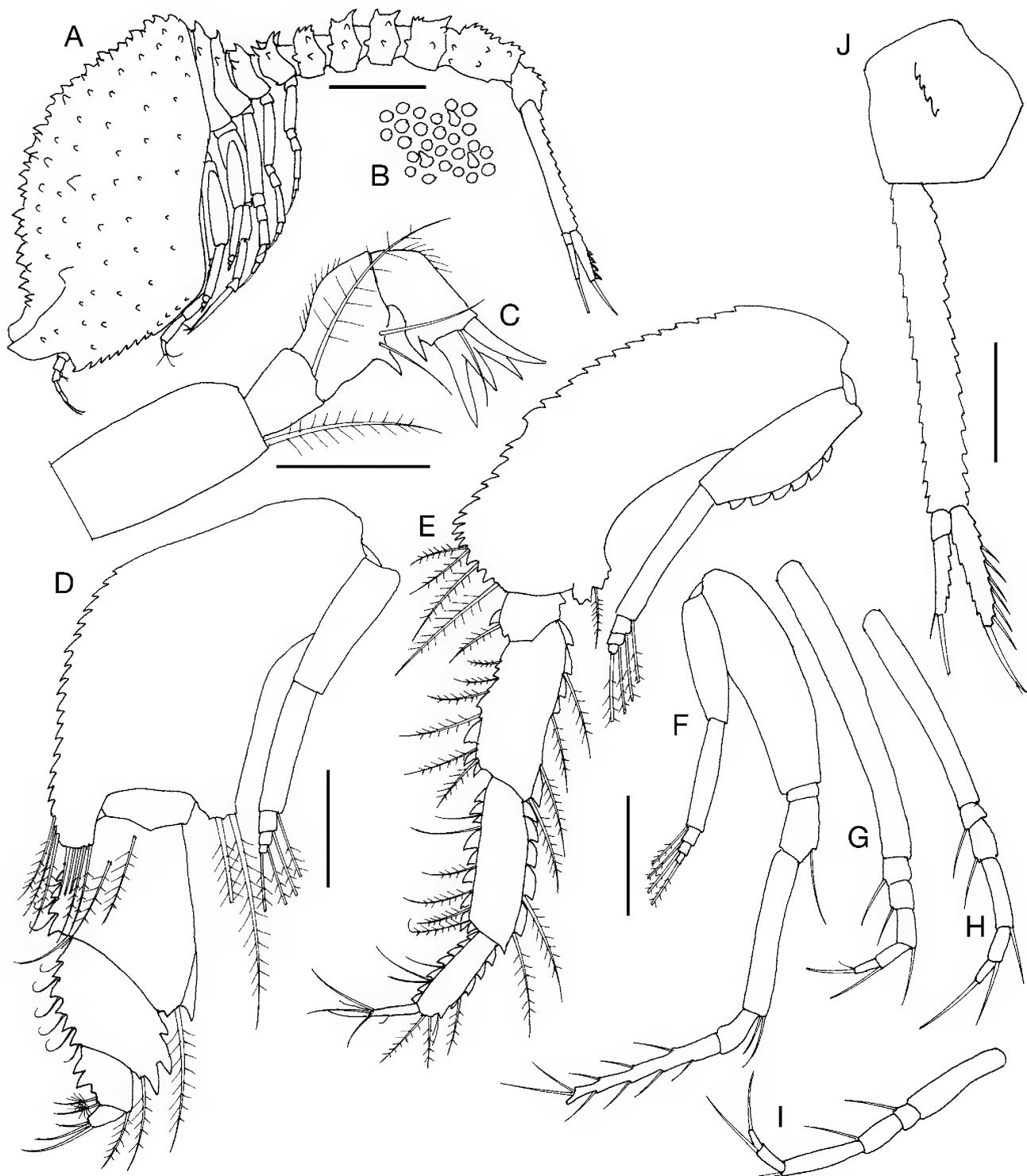


Figure 23. *Campylaspis mioarae* sp. nov. Paratype female (A) body, lateral view; (B) carapace integument, detail; (C) maxilliped 2; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 1 mm; C 0.3 mm; D, E 0.3 mm; F–I 0.5 mm; J 0.5 mm.

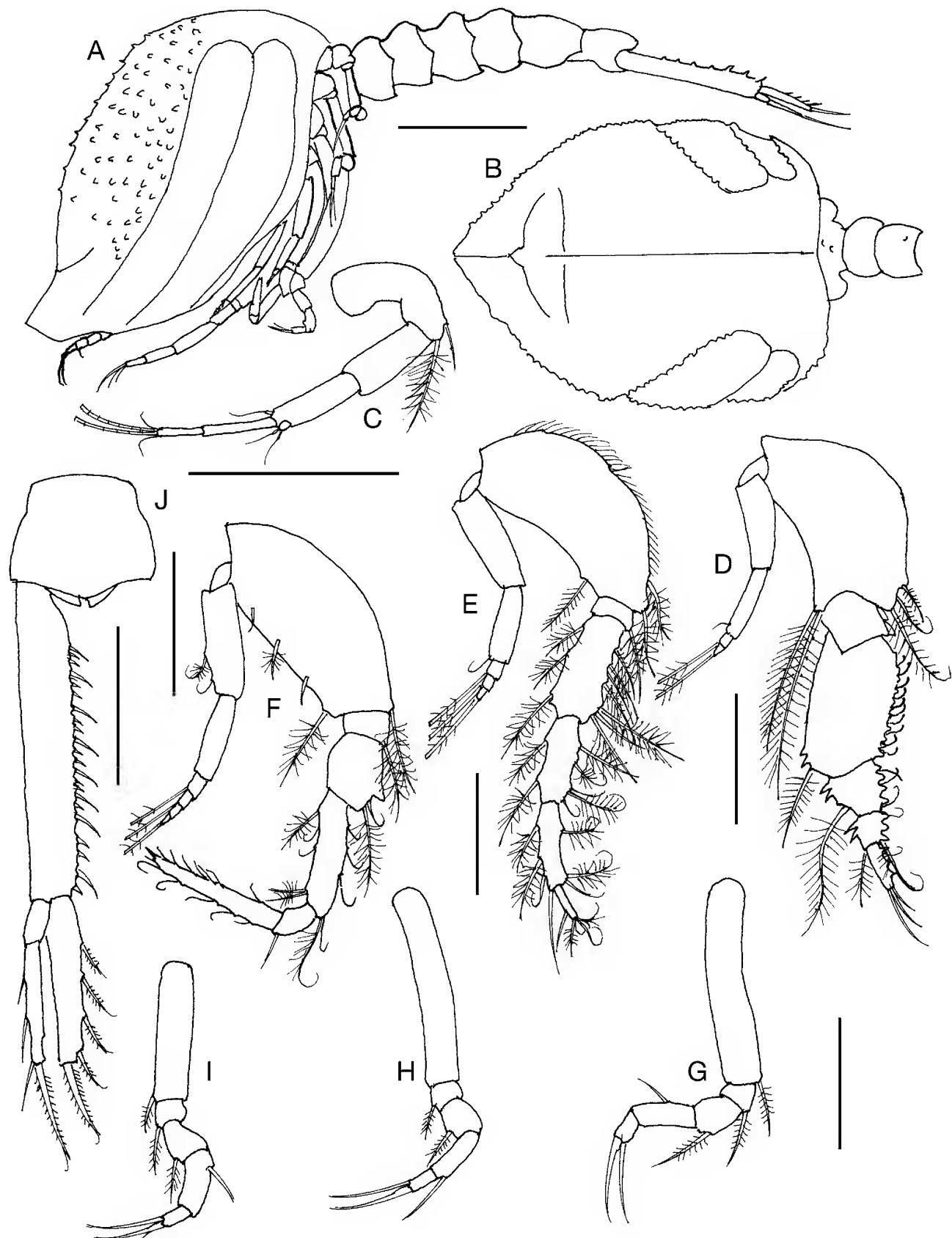


Figure 24. *Campylaspis oanae* sp. nov. Holotype female (A) body, lateral view; (B) cephalothorax, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A, B 1 mm; C 0.5 mm; D–J 0.5 mm.

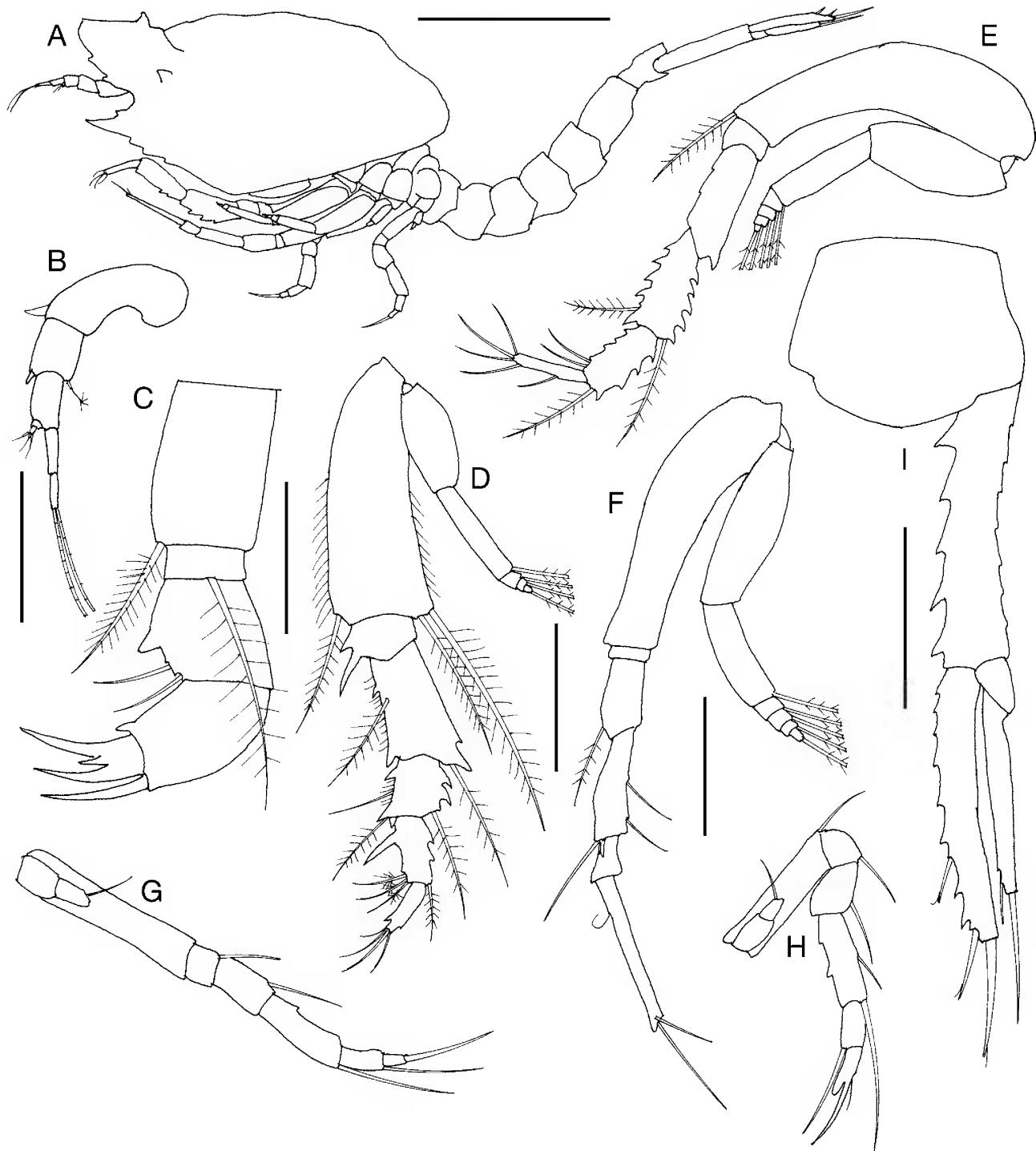


Figure 25. *Campylaspis oanalexandru* sp. nov. Holotype postmanca (A) body, lateral view; (B) antenna 1; (C) maxilliped 2; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) uropod. Scales: A 1 mm; B 0.3 mm; C 0.2 mm; D 0.3 mm; E–H 0.3 mm.

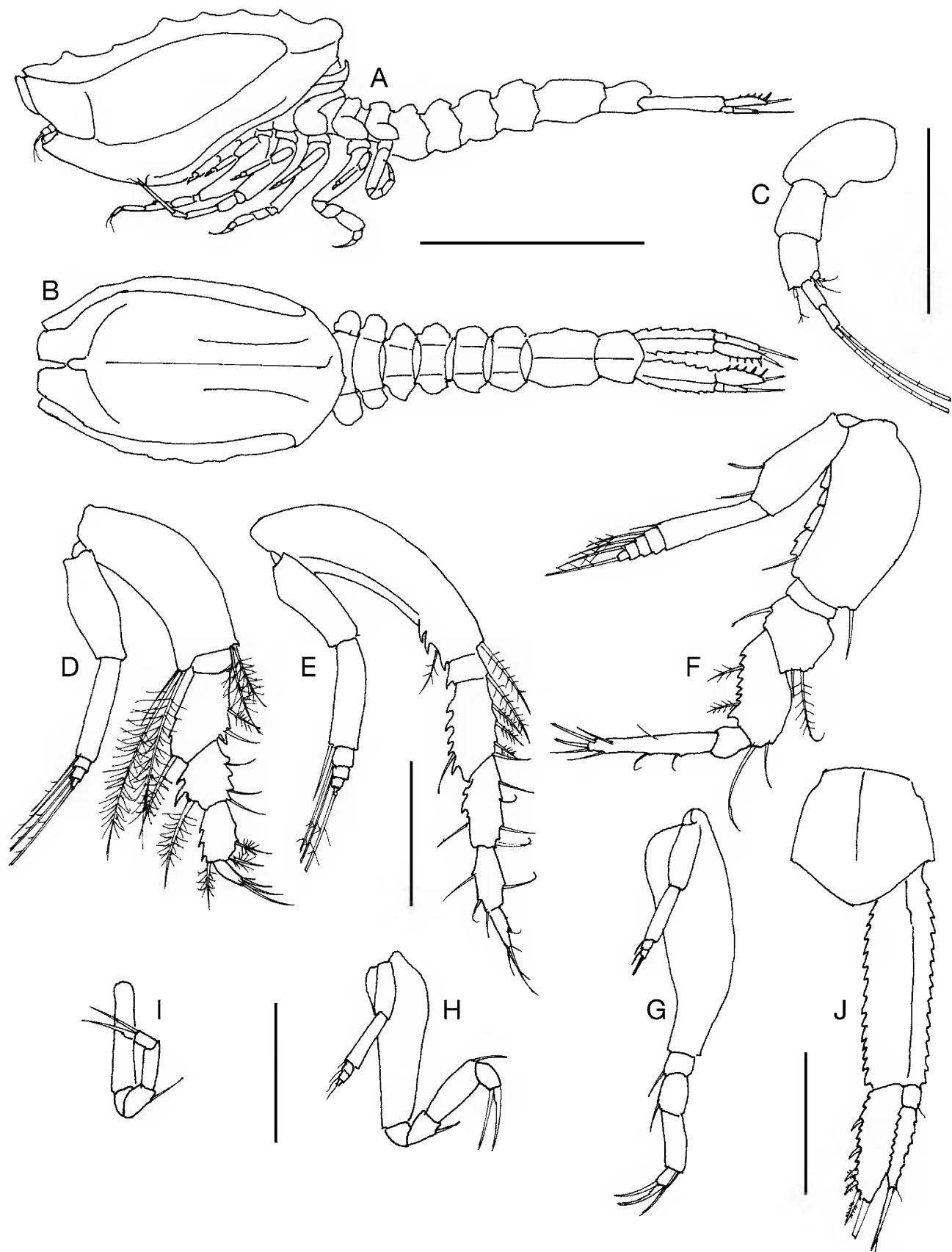


Figure 26. *Campylaspis oneai* sp. nov. Holotype subadult male (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 1 mm; C 0.2 mm; D-J 0.25 mm.

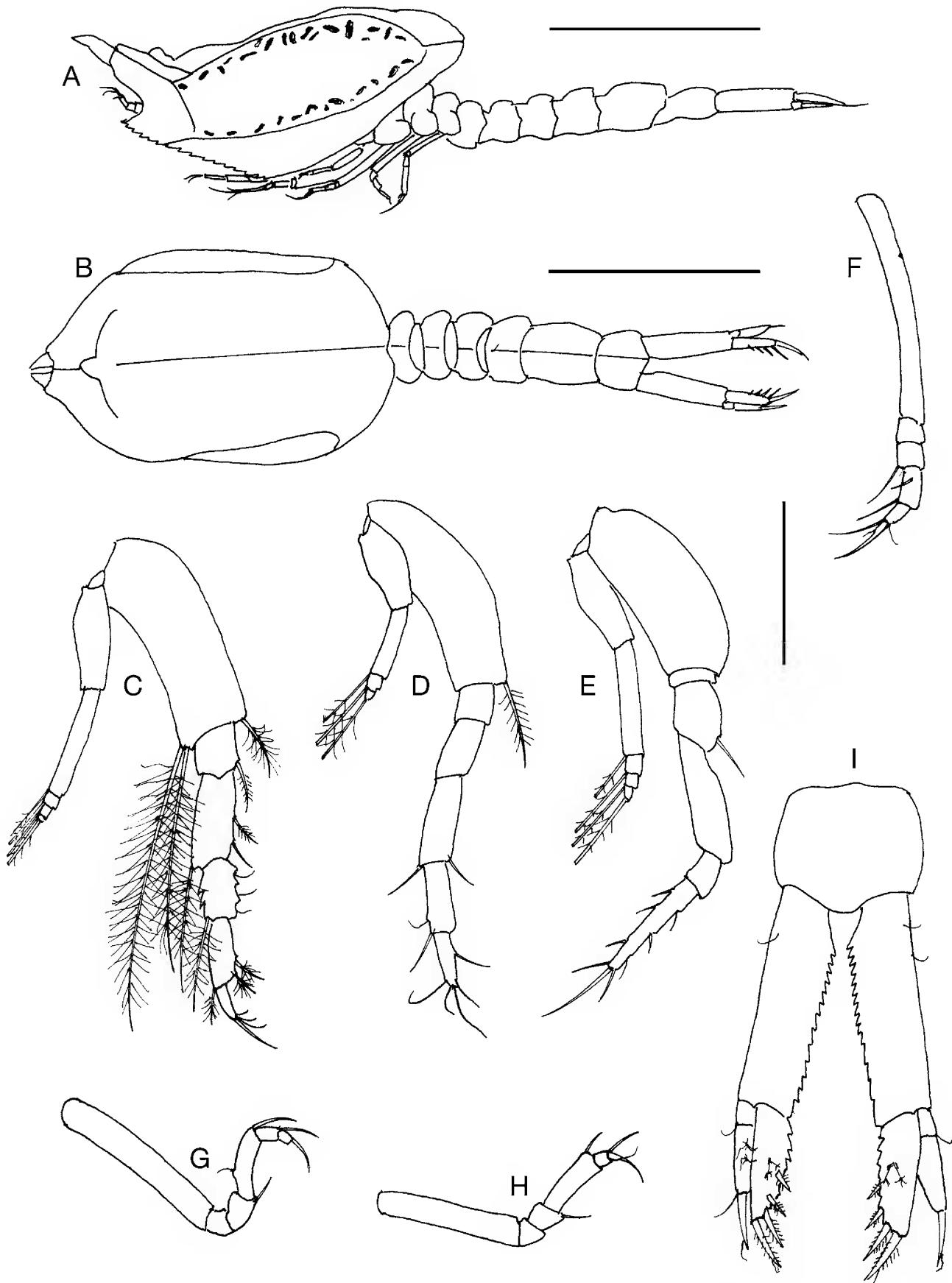


Figure 27. *Campylaspis oneai* sp. nov. Paratype female (A) body, lateral view; (B) body, dorsal view; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 3; (G) pereopod 4; (H) pereopod 5; (I) uropod. Scales: A,B 1 mm; C–I 0.3 mm.

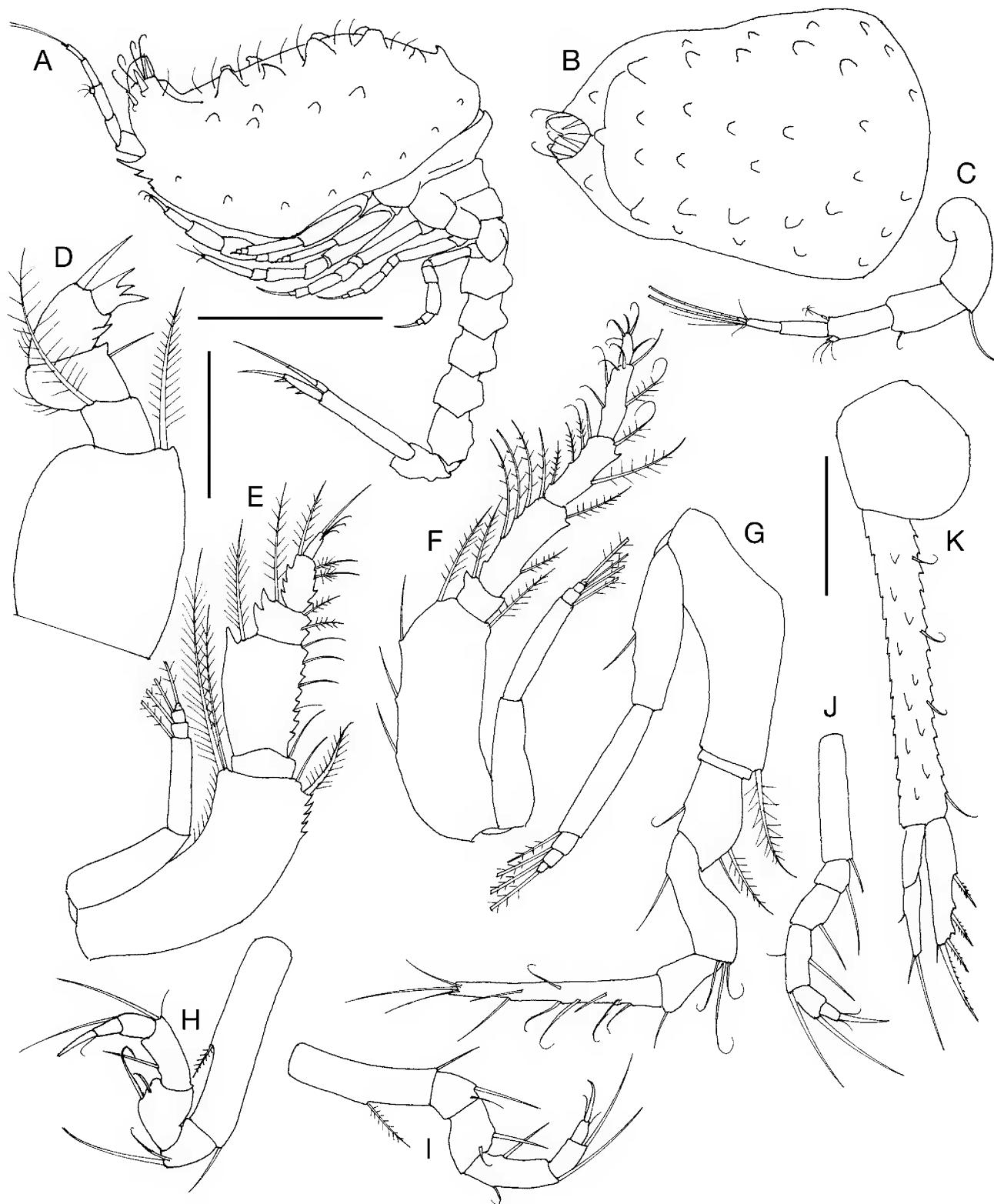


Figure 28. *Campylaspis panai* sp. nov. Paratype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A,B 1 mm; C,E-K 0.3 mm; D 0.2 mm.

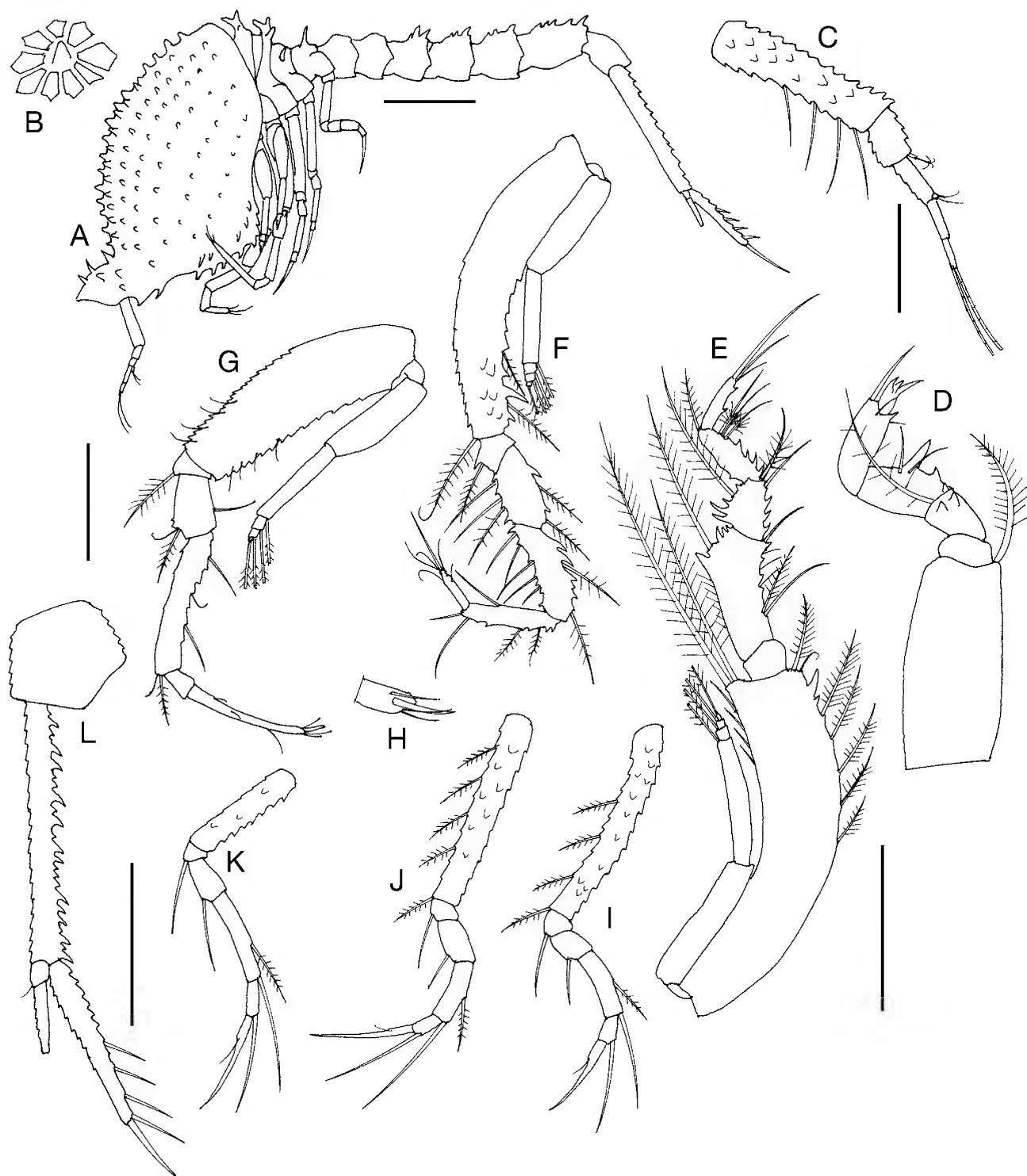


Figure 29. *Campylaspis pauca* sp. nov. Holotype female (A) body, lateral view; (B) carapace ornamentation, detail; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 2 dactylus tip, detail; (I) pereopod 3; (J) pereopod 4; (K) pereopod 5; (L) uropod. Scales: A 1 mm; B 0.3 mm; C,E-I 0.5 mm; D 0.5 mm; J 1 mm.

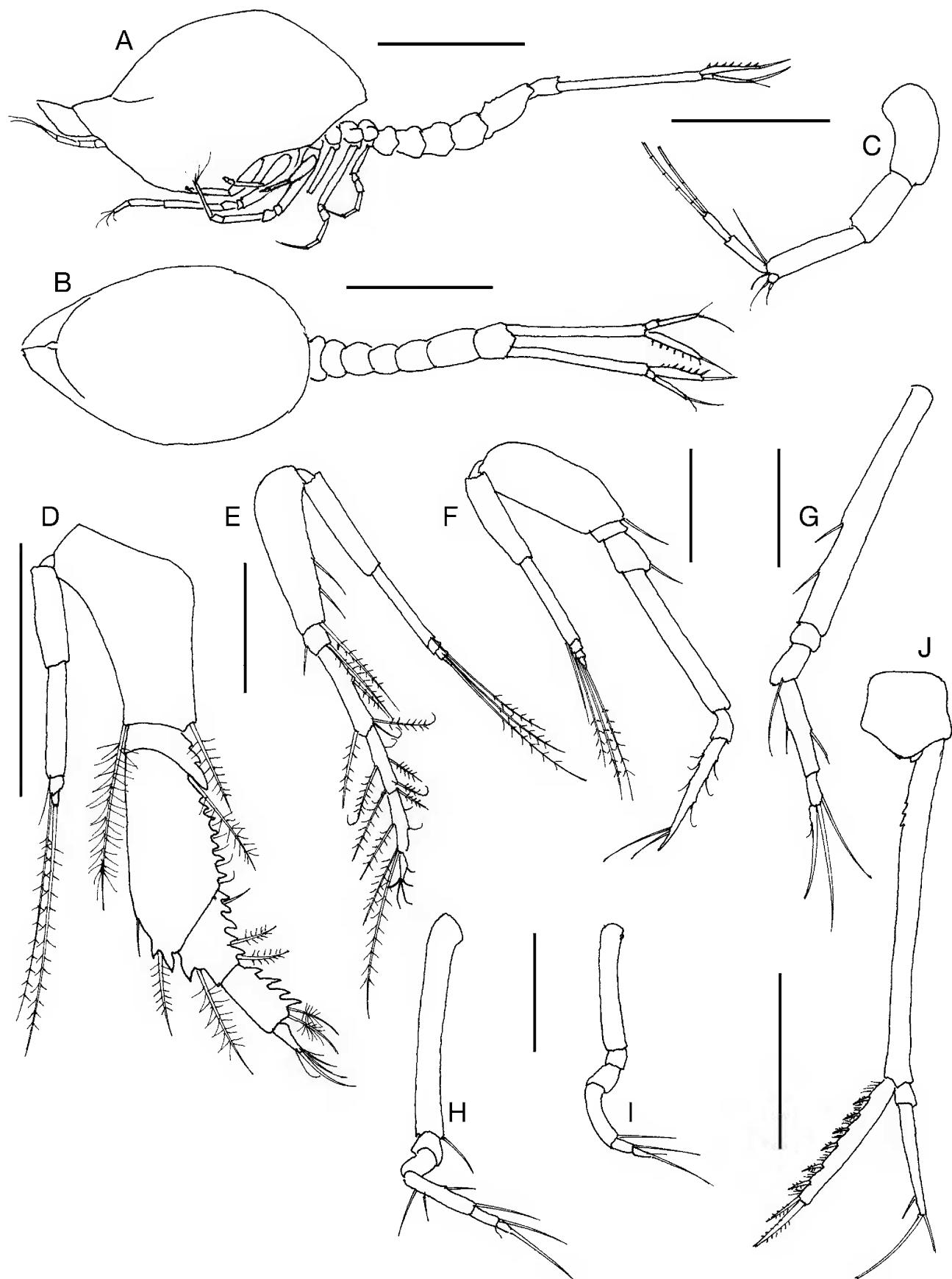


Figure 30. *Campylaspis popai* sp. nov. Holotype female (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A,B 1 mm; C 0.2 mm; D 0.5 mm; E,F 0.25 mm; G-I 0.5 mm; J 0.5 mm.

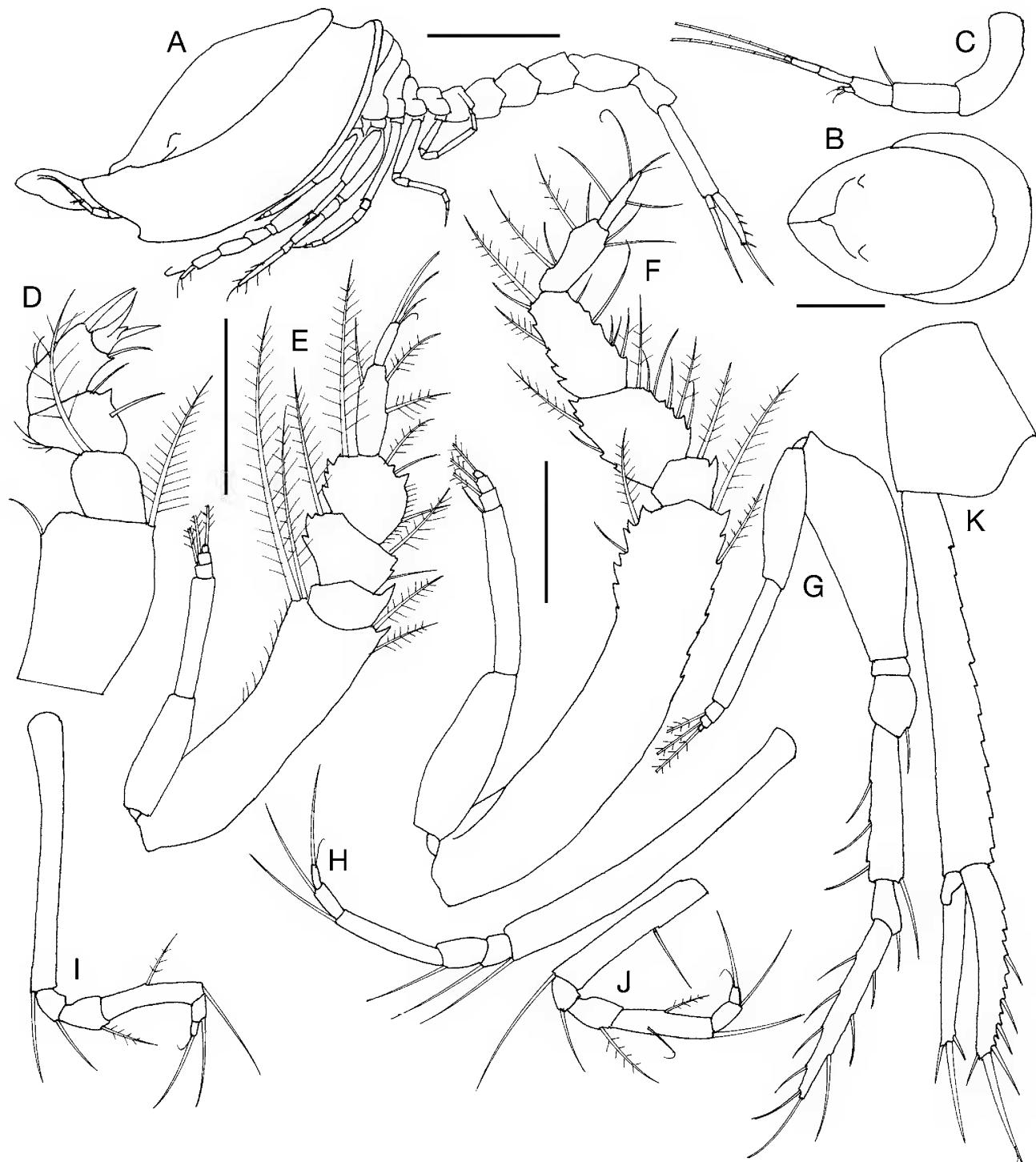


Figure 31. *Campylaspis radui* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A 1 mm; B 1 mm; C,E–K 0.3 mm; D 0.3 mm.

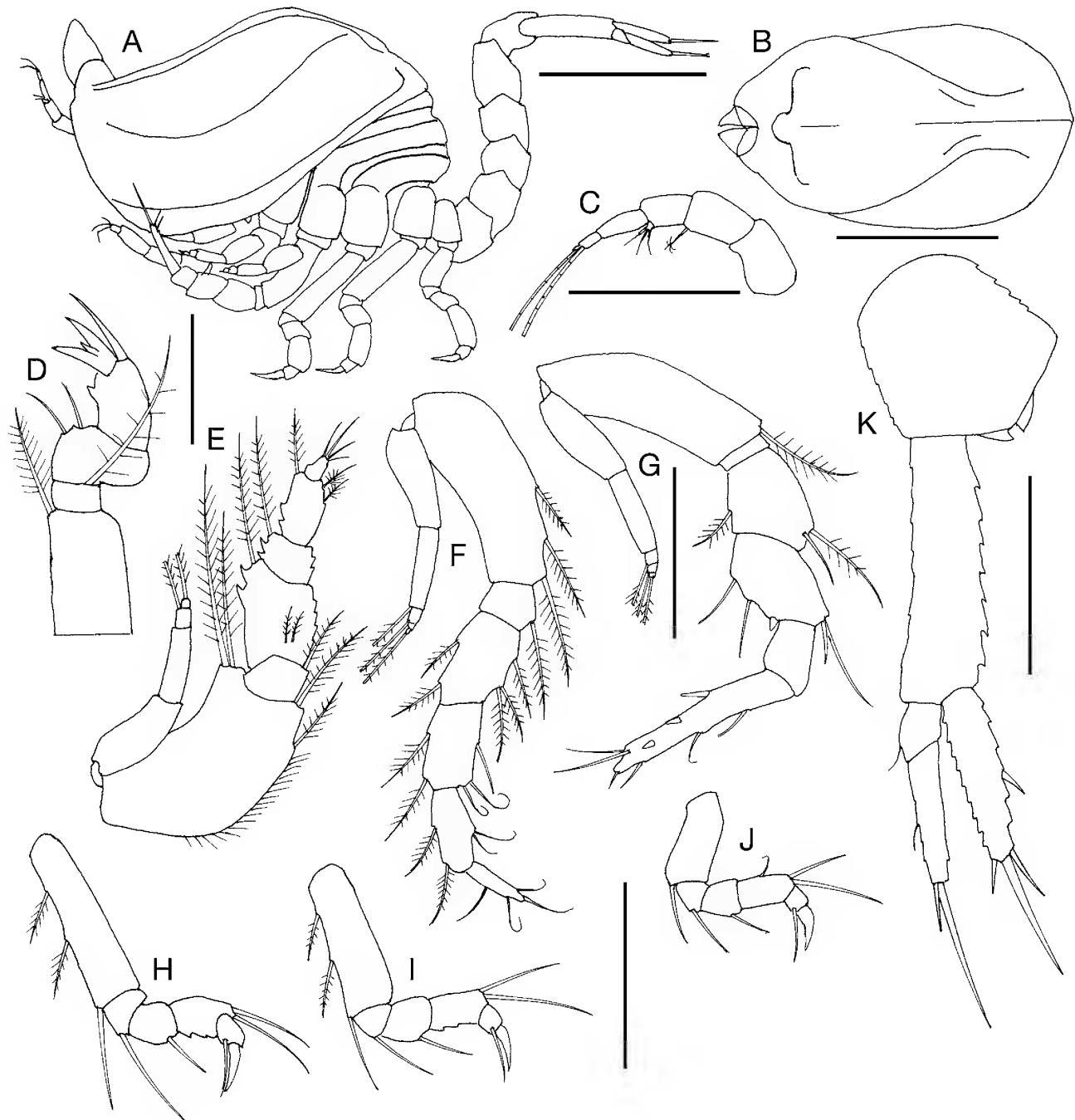


Figure 32. *Campylaspis roccatagliatai* sp. nov. Holotype female. (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A 0.5 mm; B 0.5 mm; C 3.3 mm; D 0.1 mm; E–G 0.2 mm; H–J 0.3 mm.

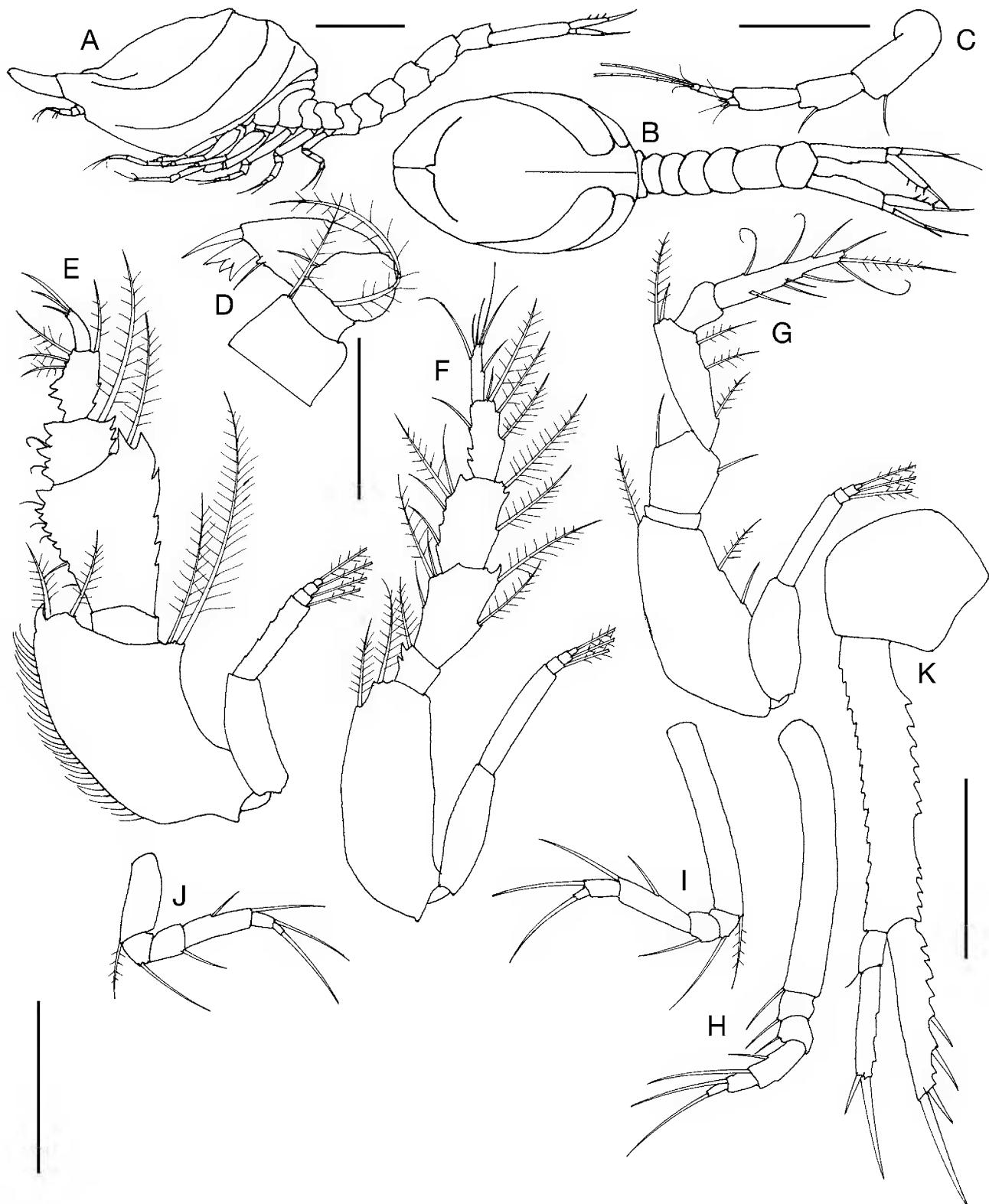


Figure 33. *Campylaspis sienkiewiczi* sp. nov. Holotype female (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A,B 1 mm; C 0.2 mm; D 0.2 mm; E-J 0.3 mm; K 0.5 mm.

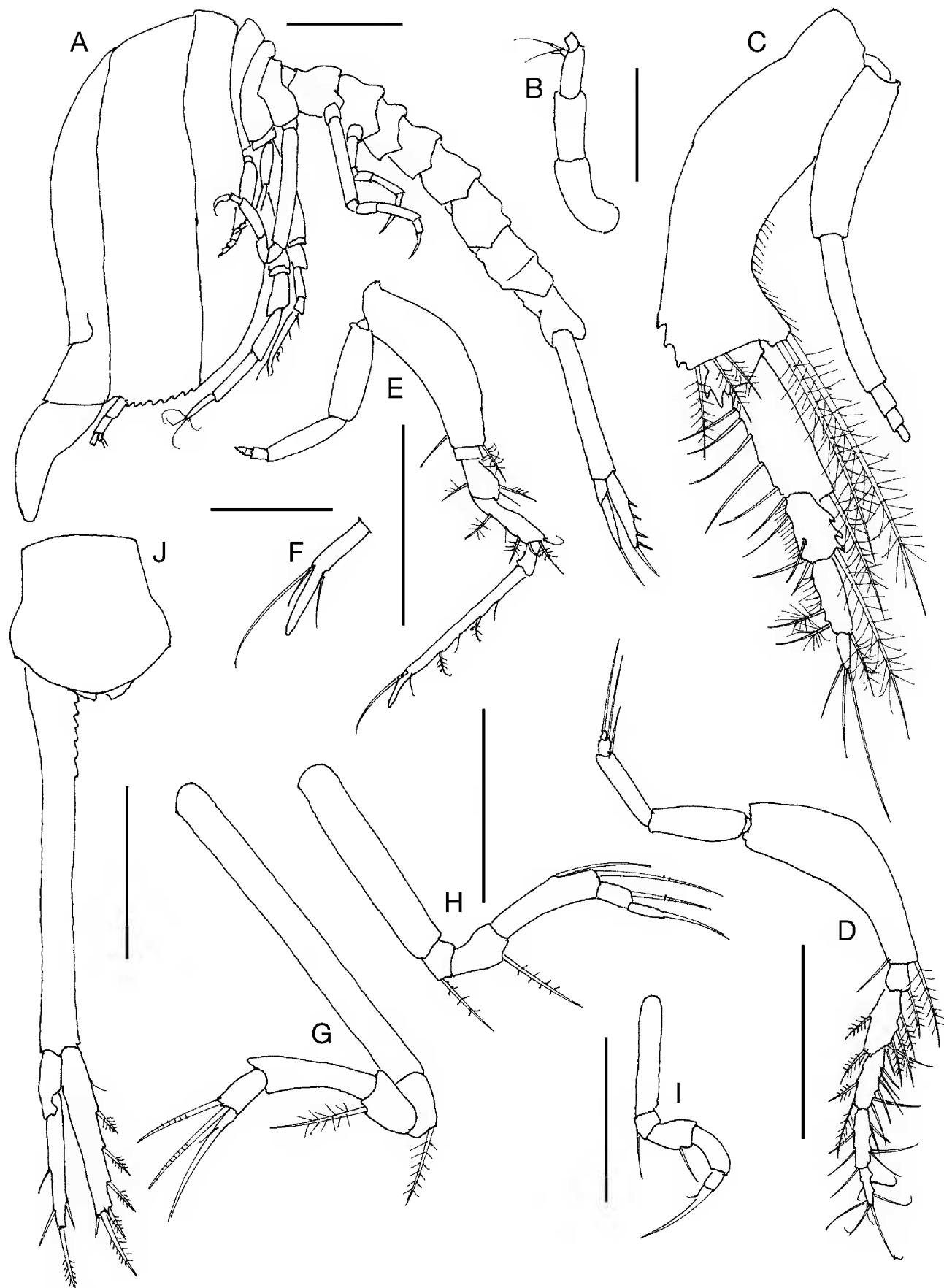


Figure 34. *Campylaspis stanae* sp. nov. Holotype female (A) body, lateral view; (B) antenna 1; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 2, detail of dactylus; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 1 mm; B,F 0.25; C,G-J 0.5 mm; D,E 1 mm.



Figure 35. *Campylaspis udrescui* sp. nov. Paratype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A,B 1 mm; C 0.3 mm; D,E,G 0.3 mm; F 1 mm; H–J 0.5 mm; K 0.3 mm.

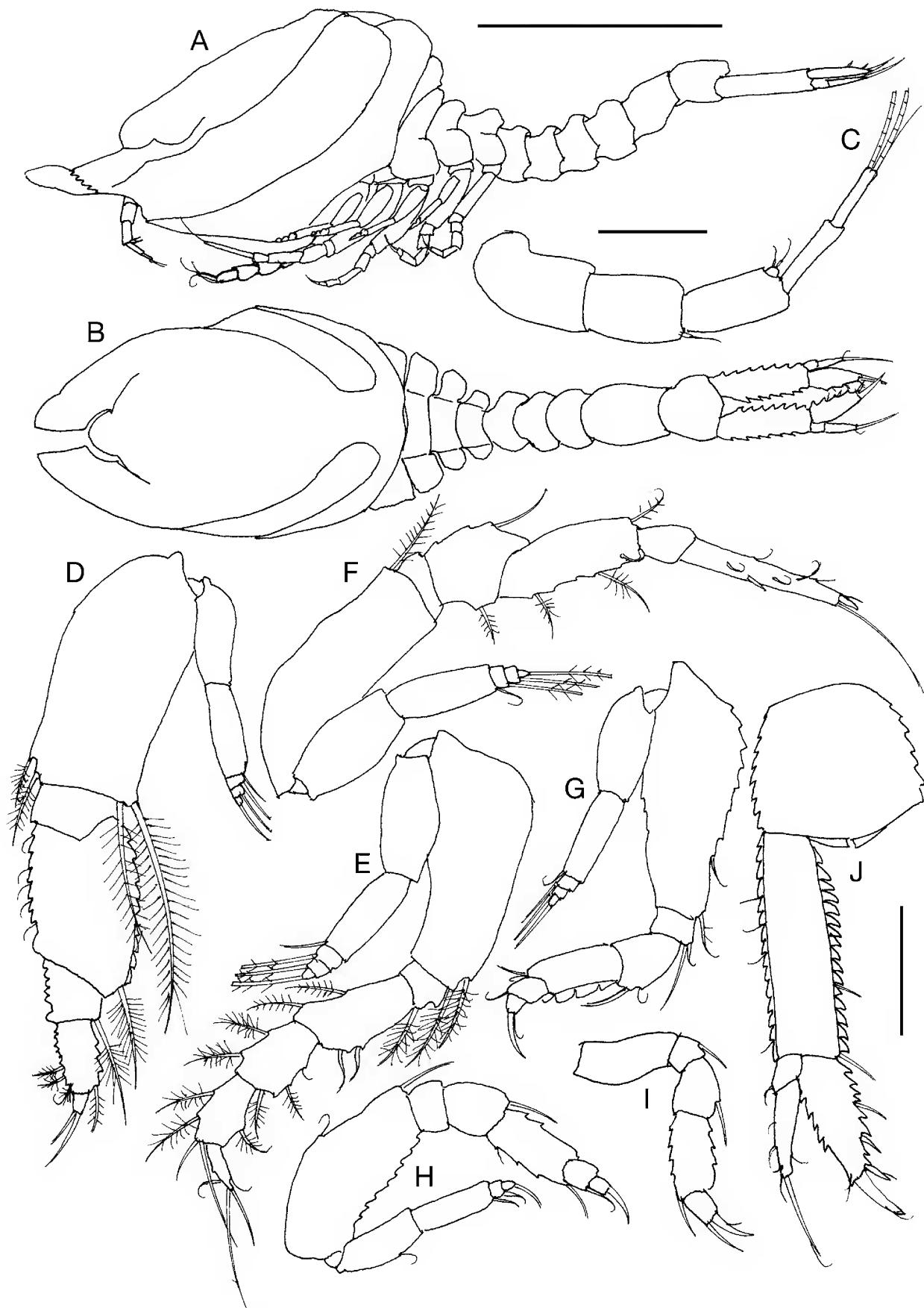


Figure 36. *Campylaspis vasilescui* sp. nov. Holotype male (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A, B 1 mm; C 0.1 mm; D-J 0.2 mm.

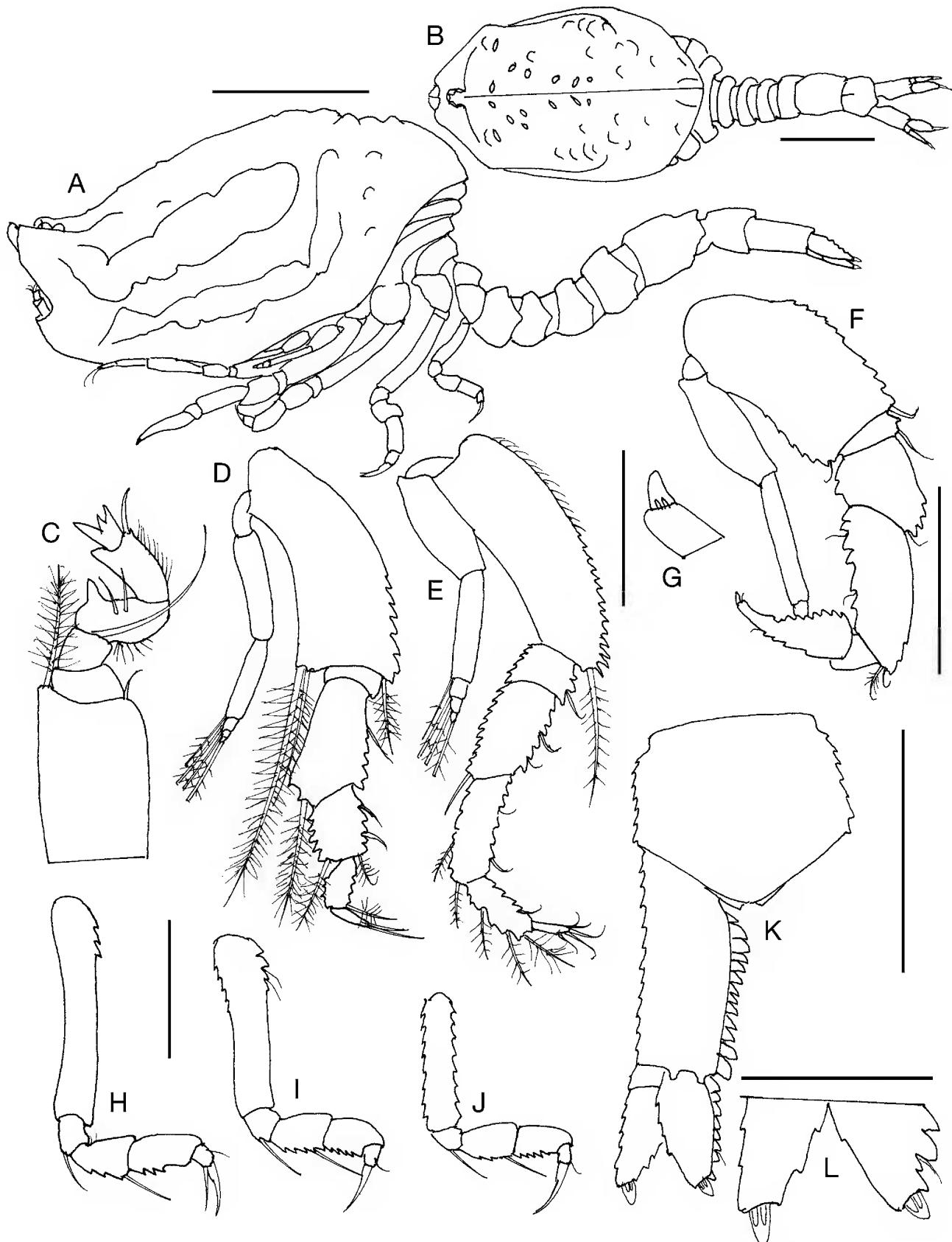


Figure 37. *Campylaspis wardi* Băcescu, 1990 Female (A) body, lateral view; (B) body, dorsal view; (C) maxilliped 2; (D) maxilliped 3; (E) pereopod 2; (F) pereopod 2; (G) pereopod 2, tip of dactylus, magnified; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod; (L) tips of rami, magnified. Scales: A 1 mm; B 1 mm; C 0.5 mm; D–F,H–K 0.5 mm.

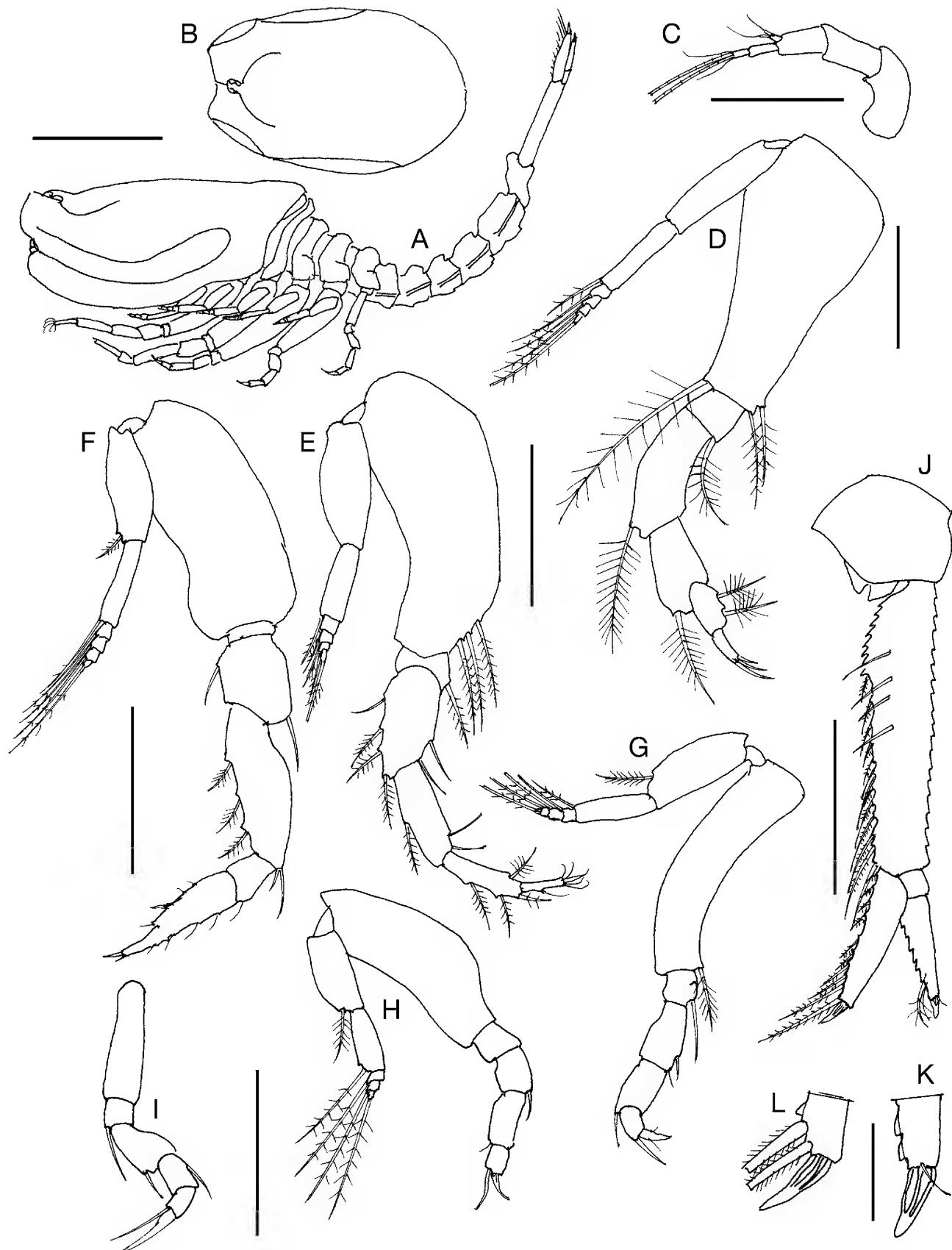


Figure 38. *Campylaspis wardi* Băcescu, 1990 Male (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 2, tip of dactylus, magnified; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod; (L) tips of rami, magnified. Scales: A 1 mm; B 1 mm; C 0.5 mm; D–F,H–K 0.5 mm.

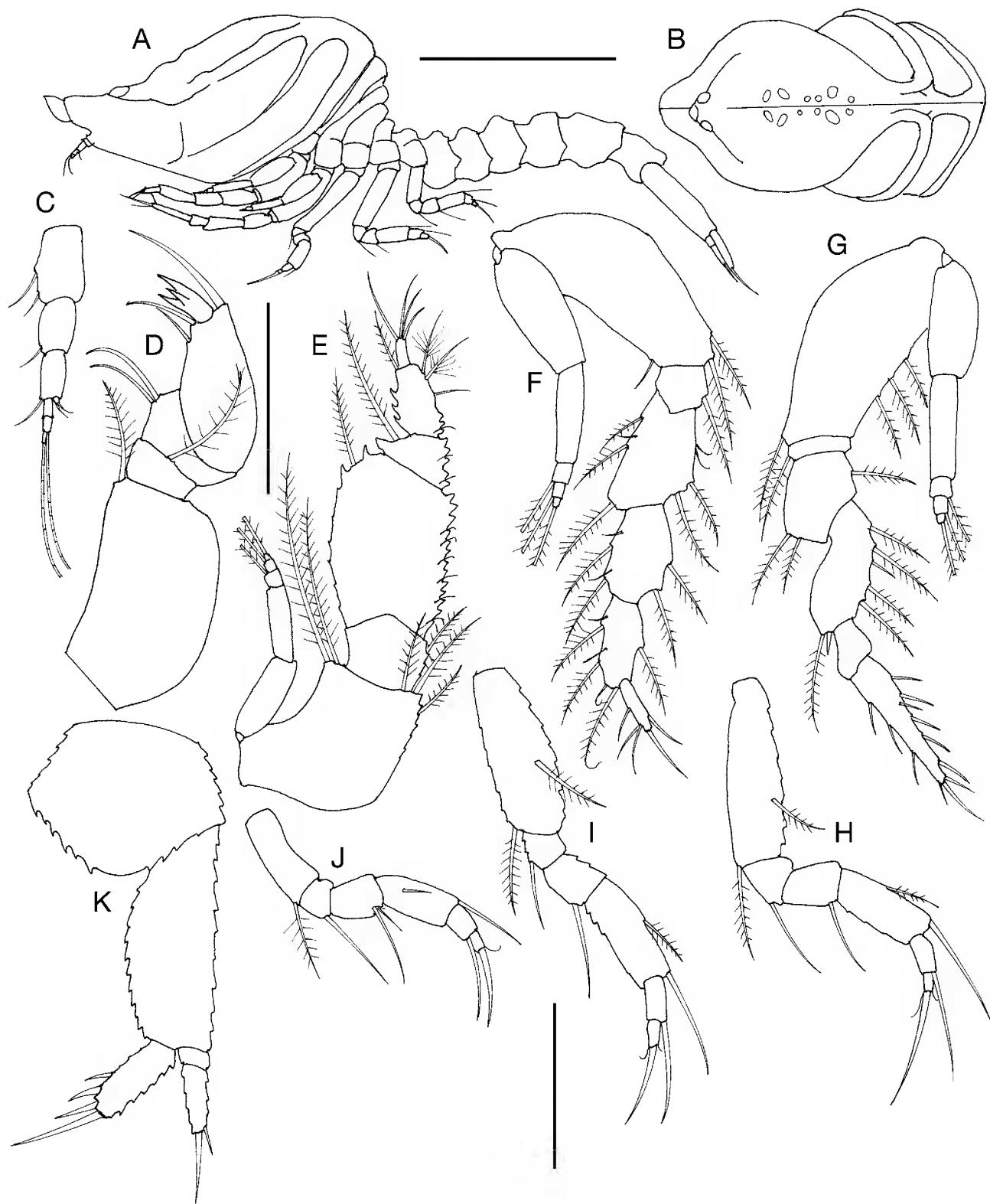


Figure 39. *Campylaspis wilsoni* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A, B 1 mm; C,E–K 0.3 mm; D 0.3 mm.

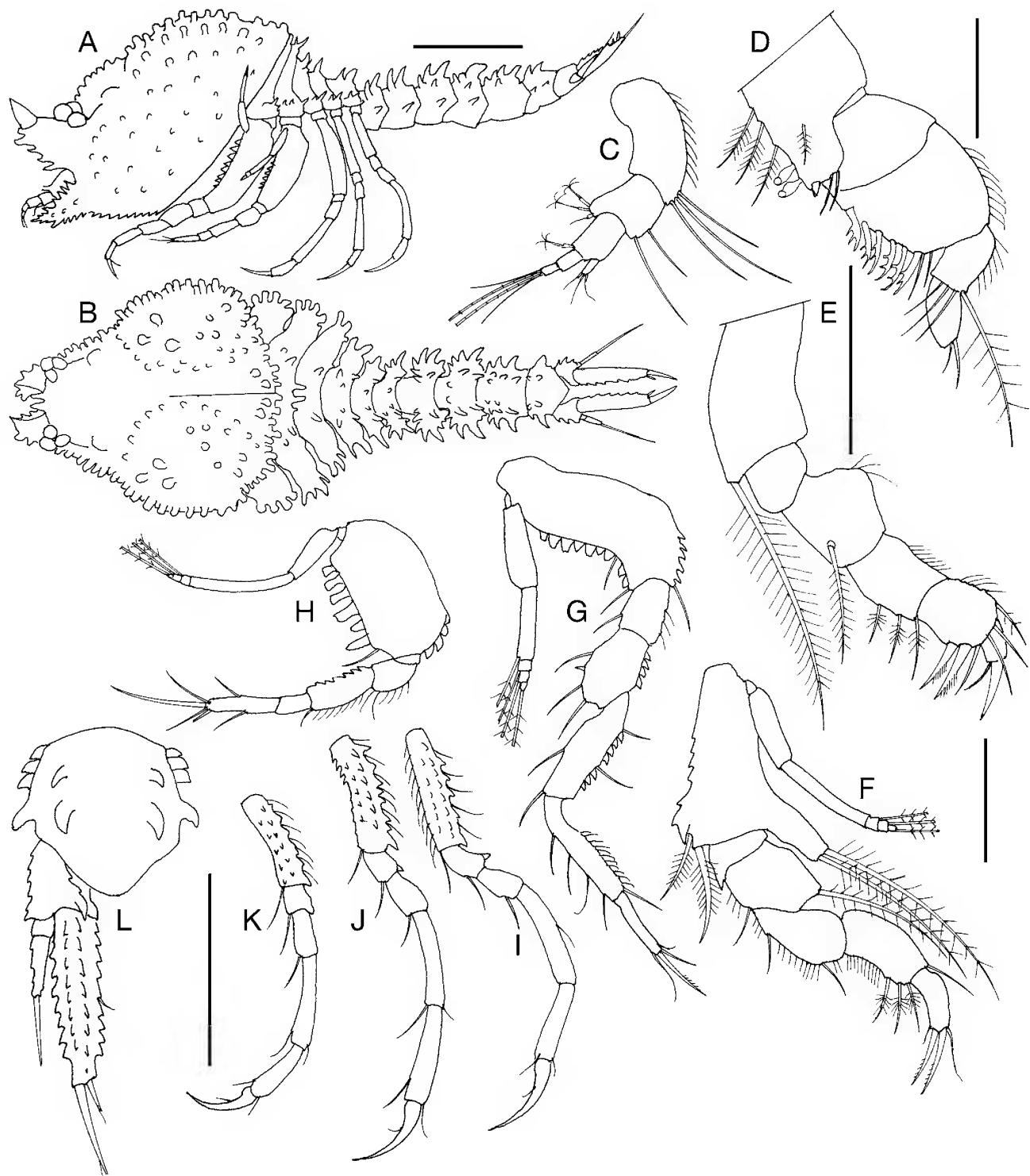


Figure 40. *Nannastacus inconstans* Hale, 1945 Female (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 1; (E) maxilliped 2; (F) maxilliped 3; (G) pereopod 1; (H) pereopod 2; (I) pereopod 3; (J) pereopod 4; (K) pereopod 5; (L) uropod. Scales: A,B 0.3 mm; C,F,L 0.1 mm; D 0.05 mm; E 0.1 mm; G-K 0.2 mm.

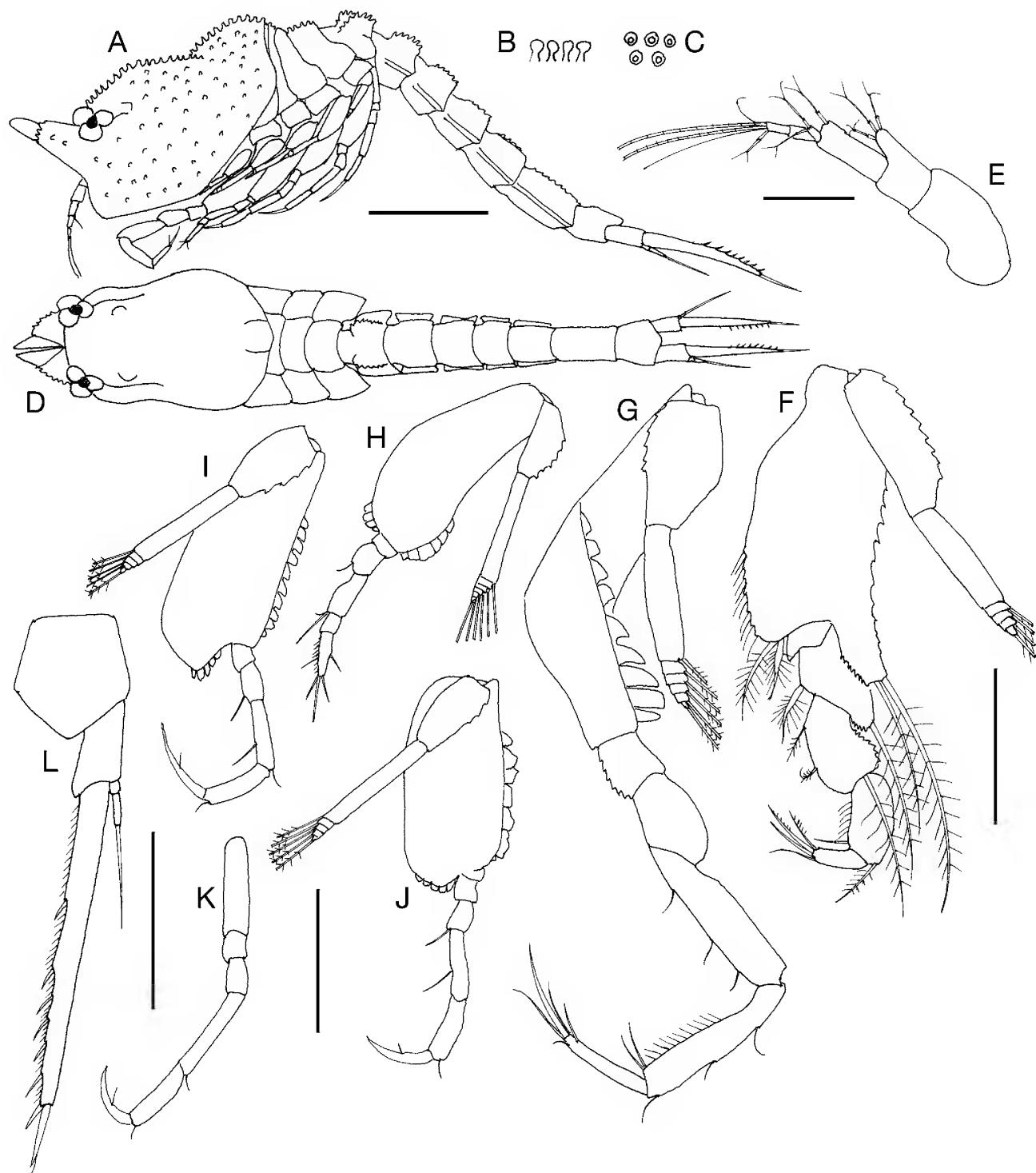


Figure 41. *Nannastacus inflatus* Hale, 1945 Male (A) body, lateral view; (B,C) carapace integument, detail; (D) body, dorsal view; (E) antenna 1; (F) maxilliped 3; (G) pereopod 1; (H) pereopod 2; (I) pereopod 3; (J) pereopod 4; (K) pereopod 5; (L) uropod. Scales: A,B 0.5 mm; D 0.1 mm; E,F 0.2 mm; G-J 0.3 mm; K 0.3 mm.

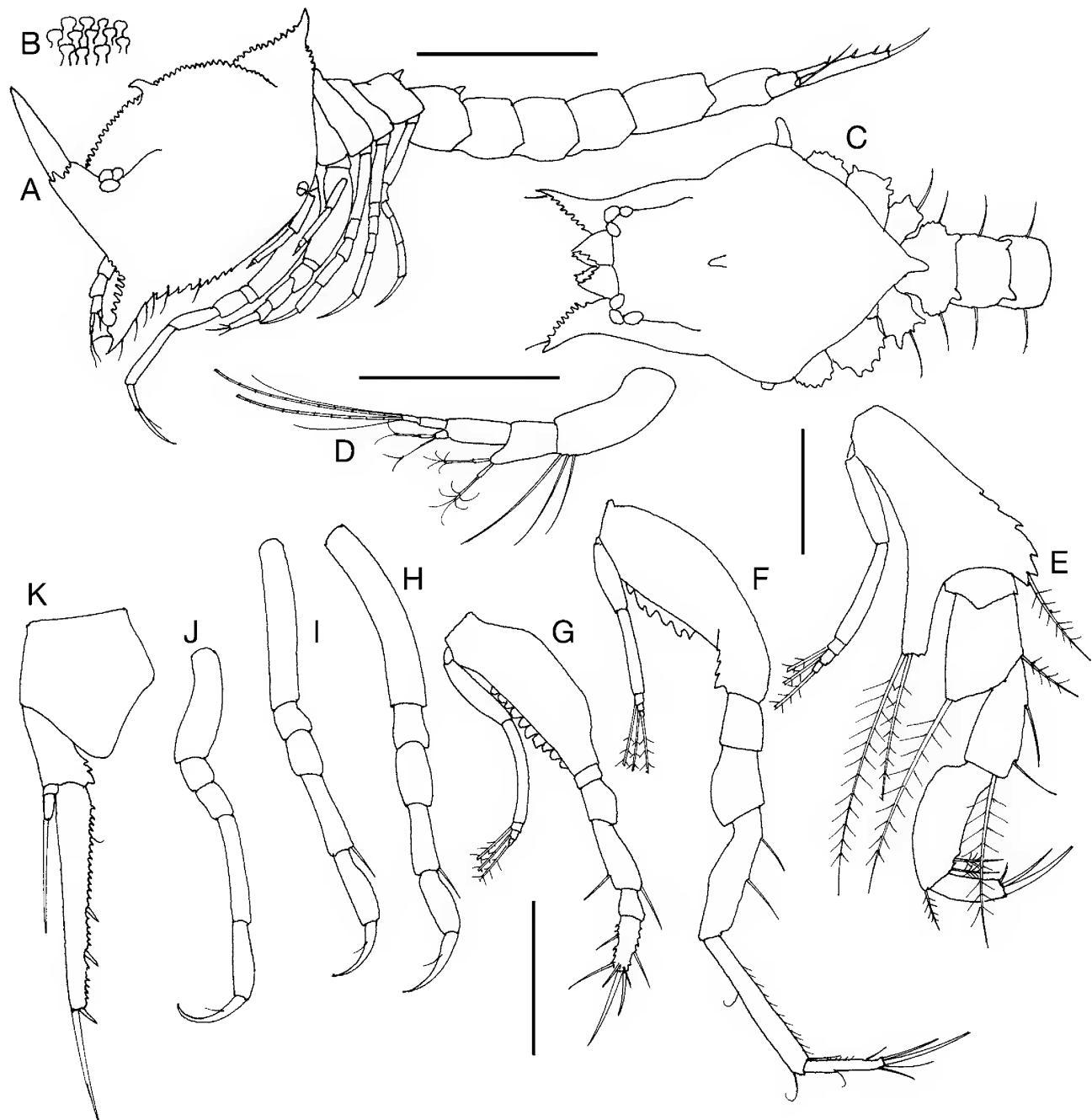


Figure 42. *Nannastacus papadopoli* sp. nov. Holotype female. (A) body, lateral view; (B) body, dorsal view; (C) carapace integument, detail; (D) antenna 1; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A, B 0.5 mm; D 0.2 mm; E–K 0.1 mm.

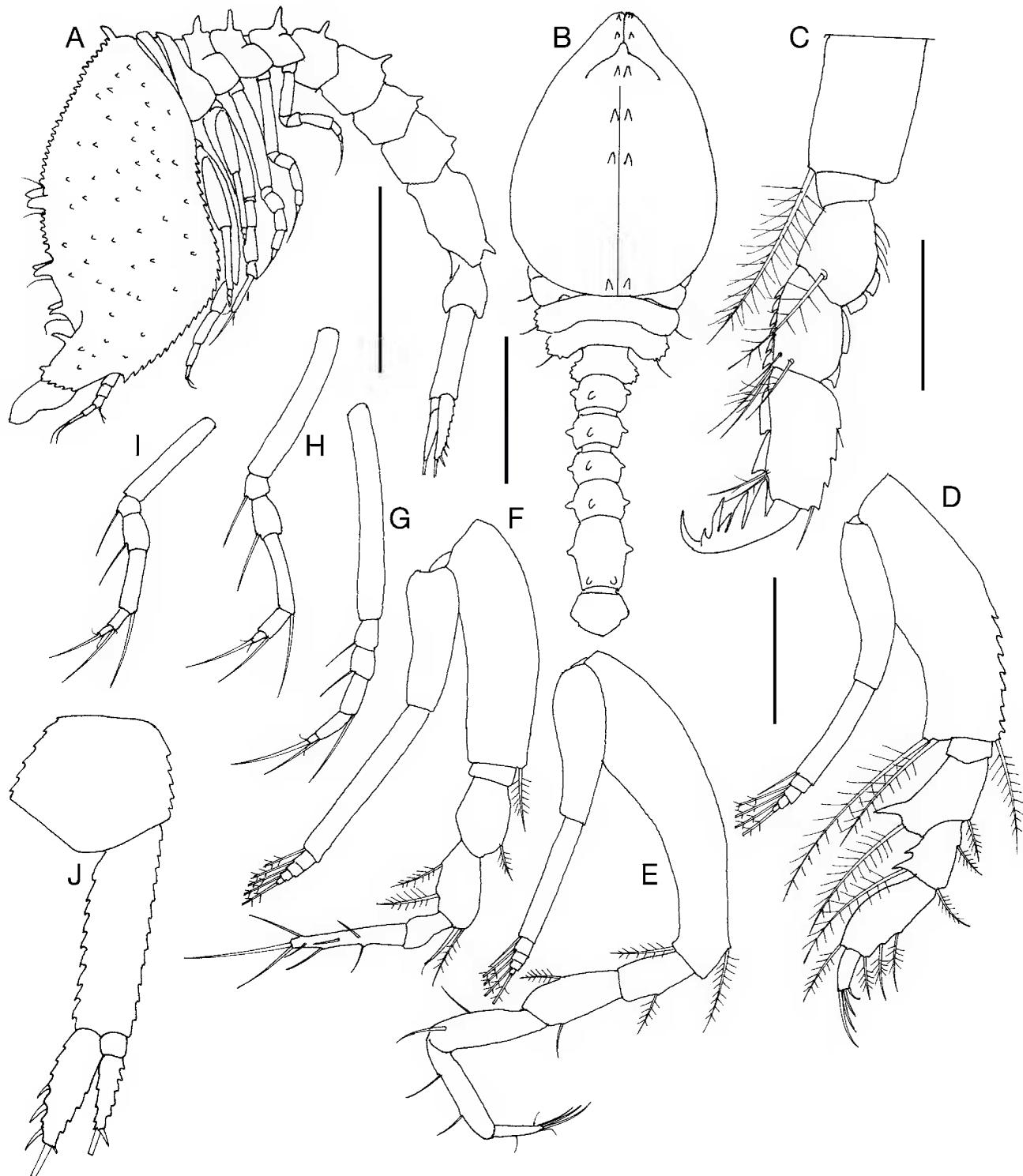


Figure 43. *Procampylaspis capraruae* sp. nov. Holotype female (A) body, lateral view; (B) body, dorsal view; (C) maxilliped 2; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 1 mm; B 1 mm; C 0.2 mm; D–J 0.3 mm.

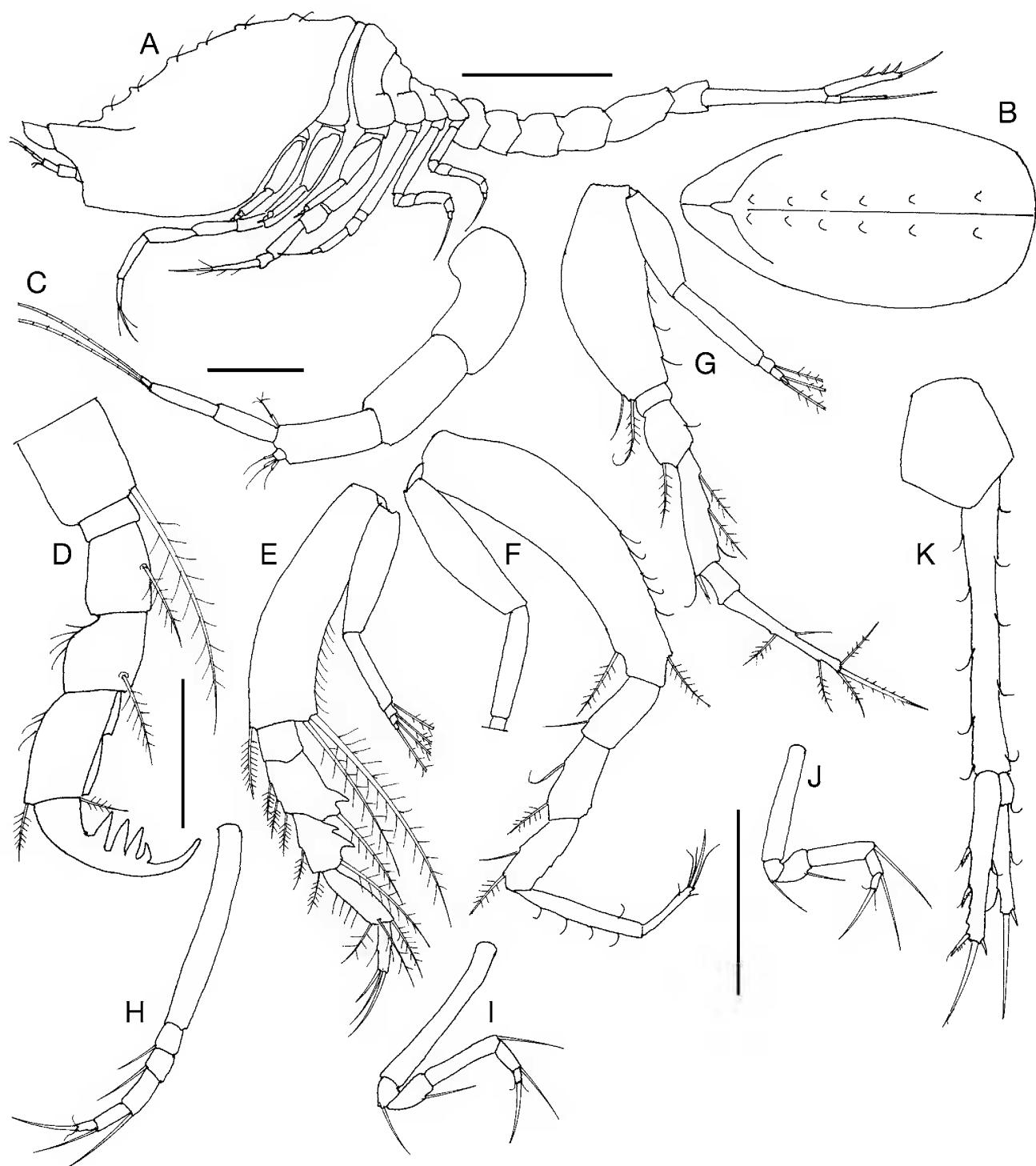


Figure 44. *Procampylaspis corberai* sp. nov. Paratype female (A) body, lateral view; (B) carapace, drosal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A,B 1 mm; C 0.1 mm; D 0.2 mm; E-K 0.5 mm.

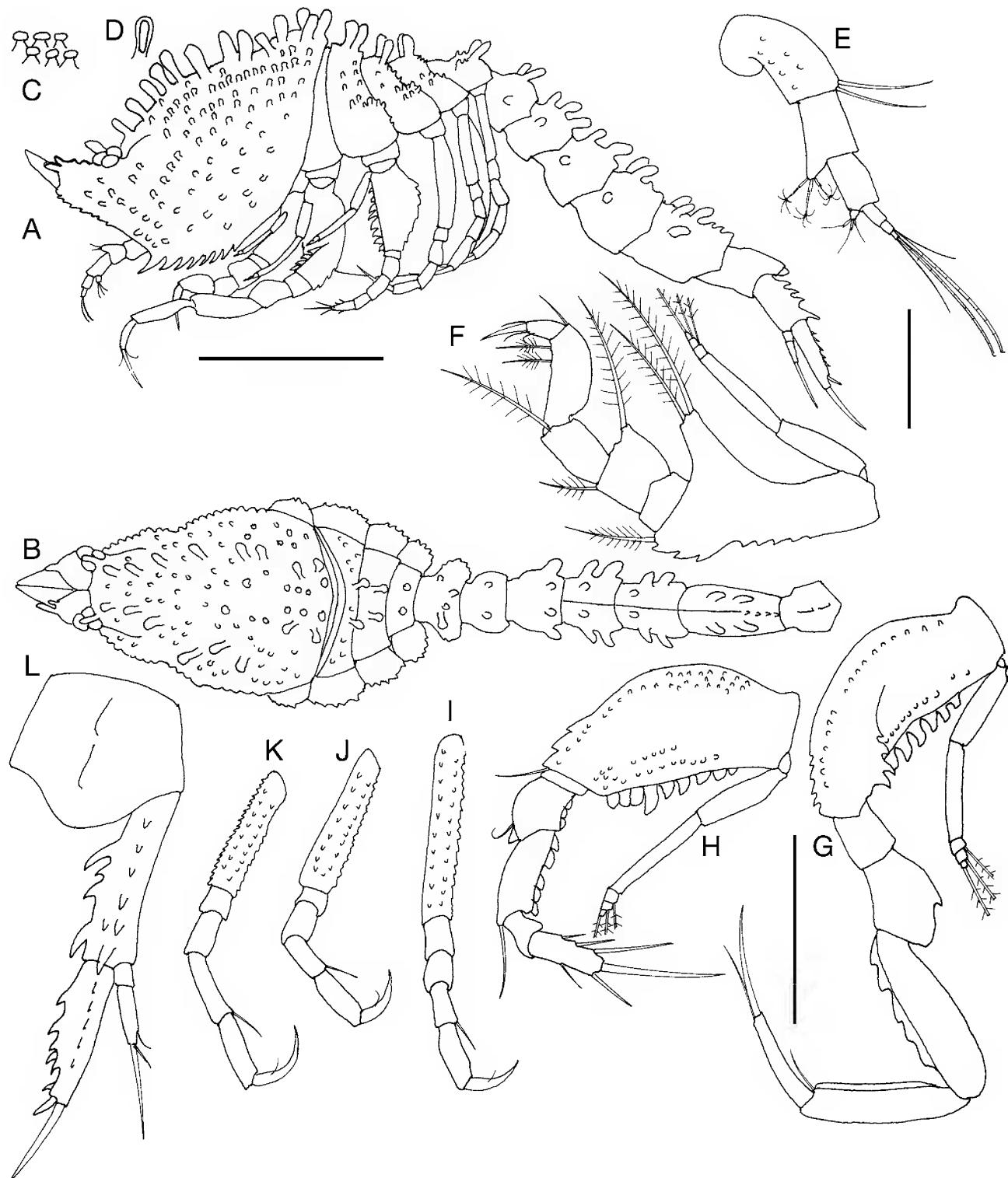


Figure 45. *Scherocumella weinbergae* sp. nov. Paratype female (A) body, lateral view; body, dorsal view; (C,D) carapace integument, detail; (E) antenna 1; (F) maxilliped 3; (G) pereiopod 1; (H) pereiopod 2; (I) pereiopod 3; (J) pereiopod 5; (K) pereiopod 5; (L) uropod. Scales: A, B 0.5 mm; D-G 0.1 mm; H-K 0.2 mm.

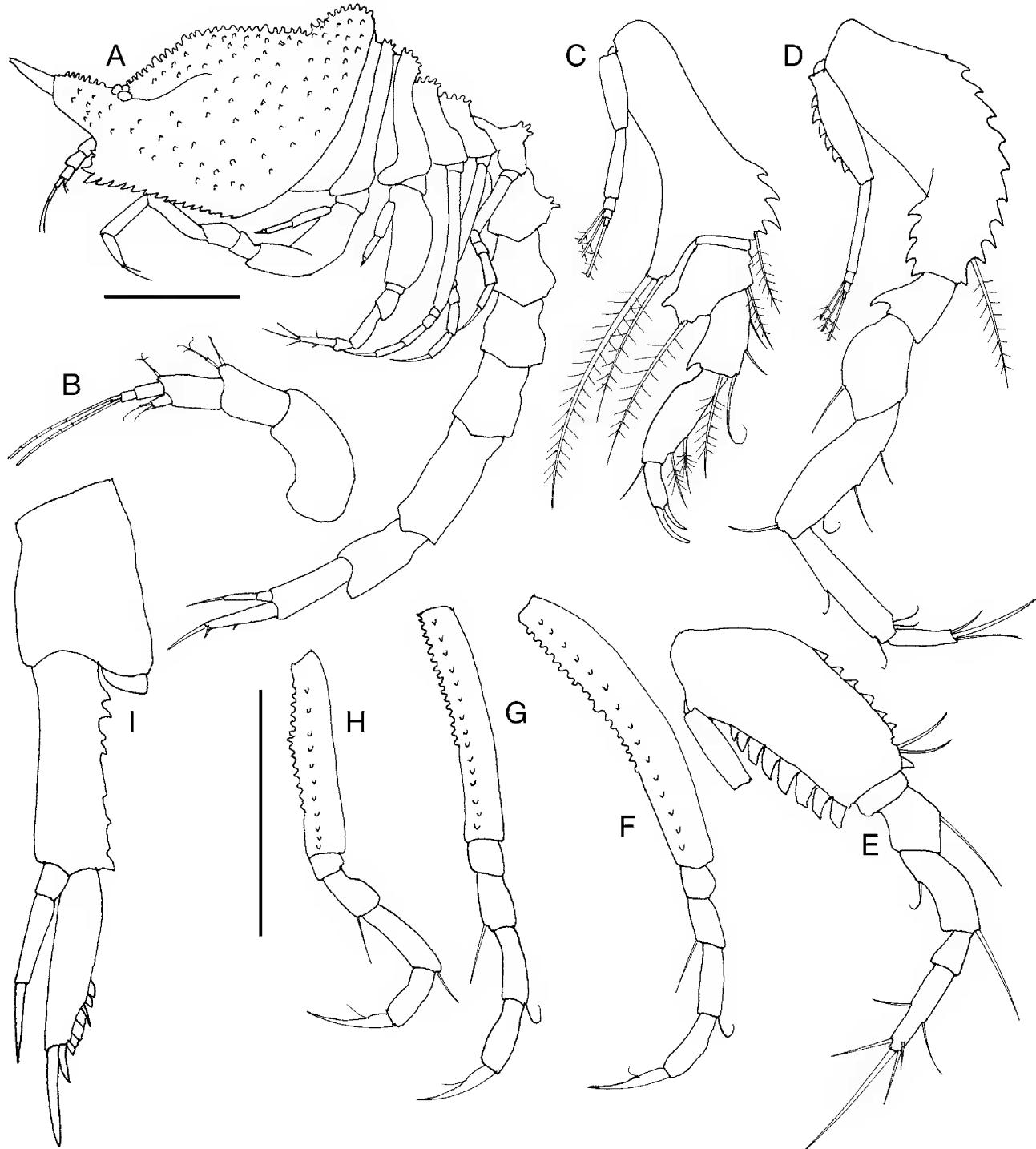


Figure 46. *Scherocumella wittmanni* sp. nov. Holotype female (A) body, lateral view; (B) antenna 1; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 3; (G) pereopod 4; (H) pereopod 5; (I) uropod. Scales: A 0.3 mm; B–I 0.2 mm.

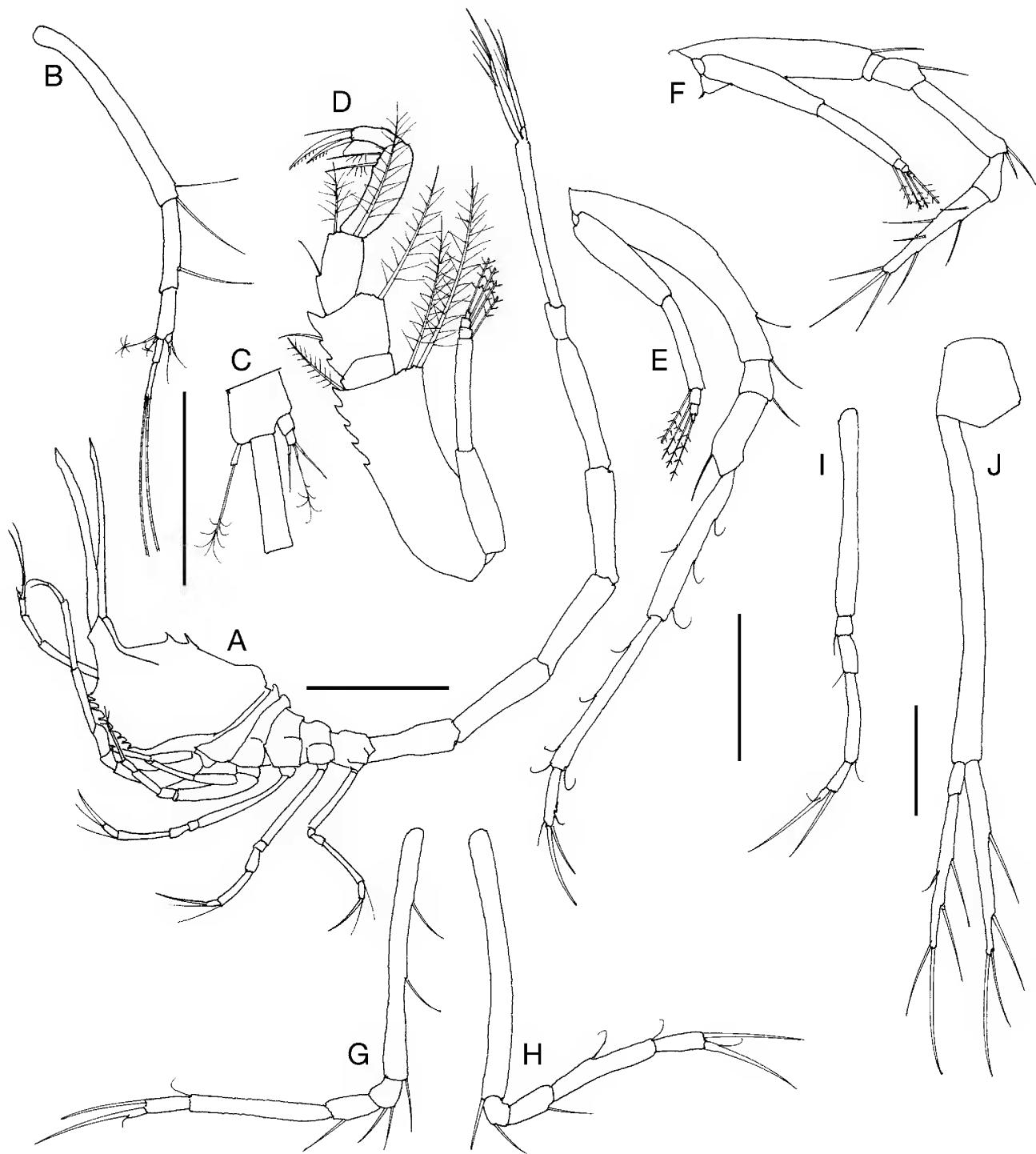


Figure 47. *Schizocuma antipai* sp. nov. Holotype female (A) body, lateral view; (B) antenna 1; (C) antenna 1, detail; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 0.5 mm; B,D,I 0.3 mm; C 0.1 mm; J 0.3 mm.

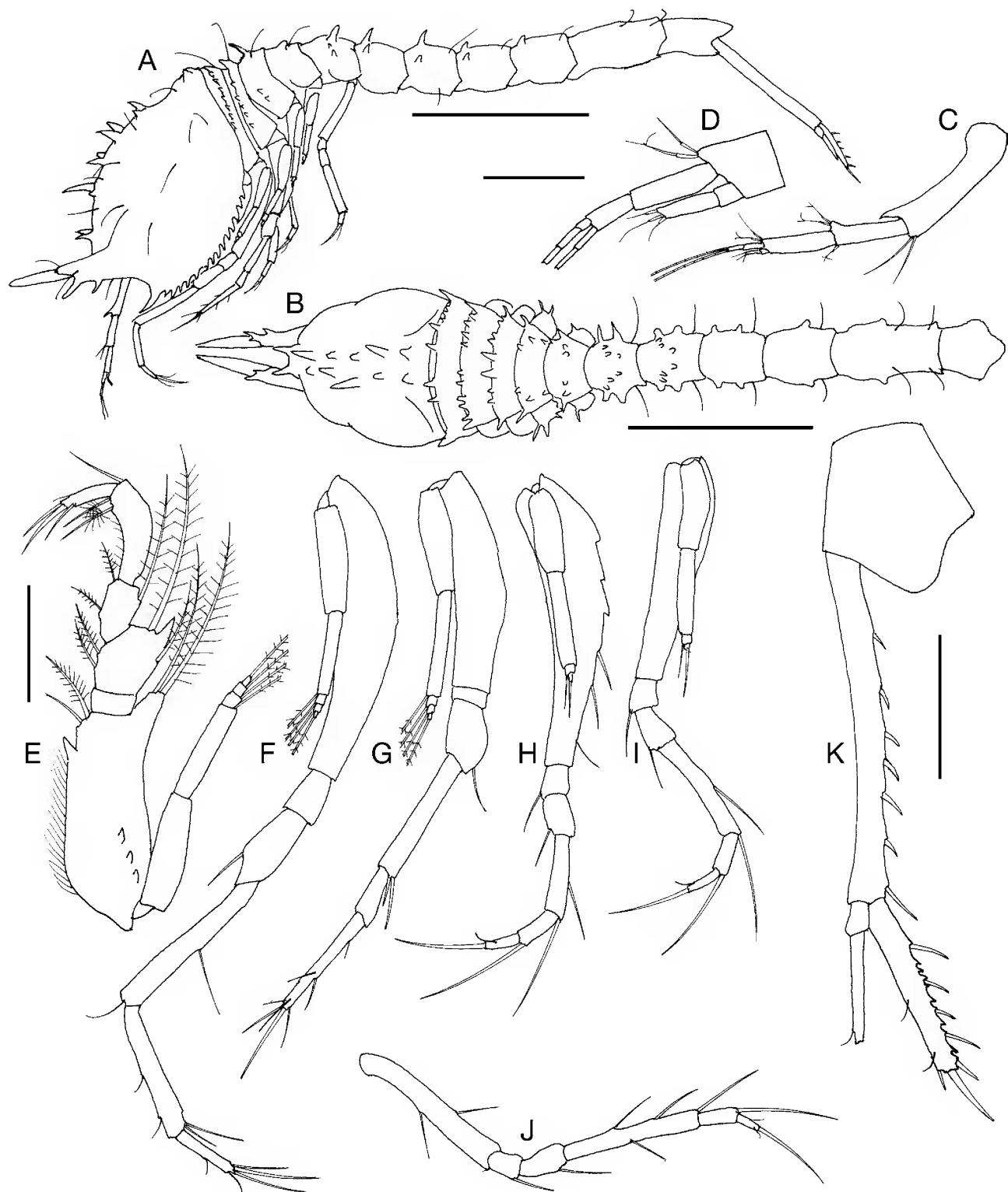


Figure 48. *Schizocuma bacescui* sp. nov. Holotype male (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) antenna 1, detail; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A 1 mm; B 1 mm; C–K 0.3 mm; D 0.1 mm; E 0.3 mm.

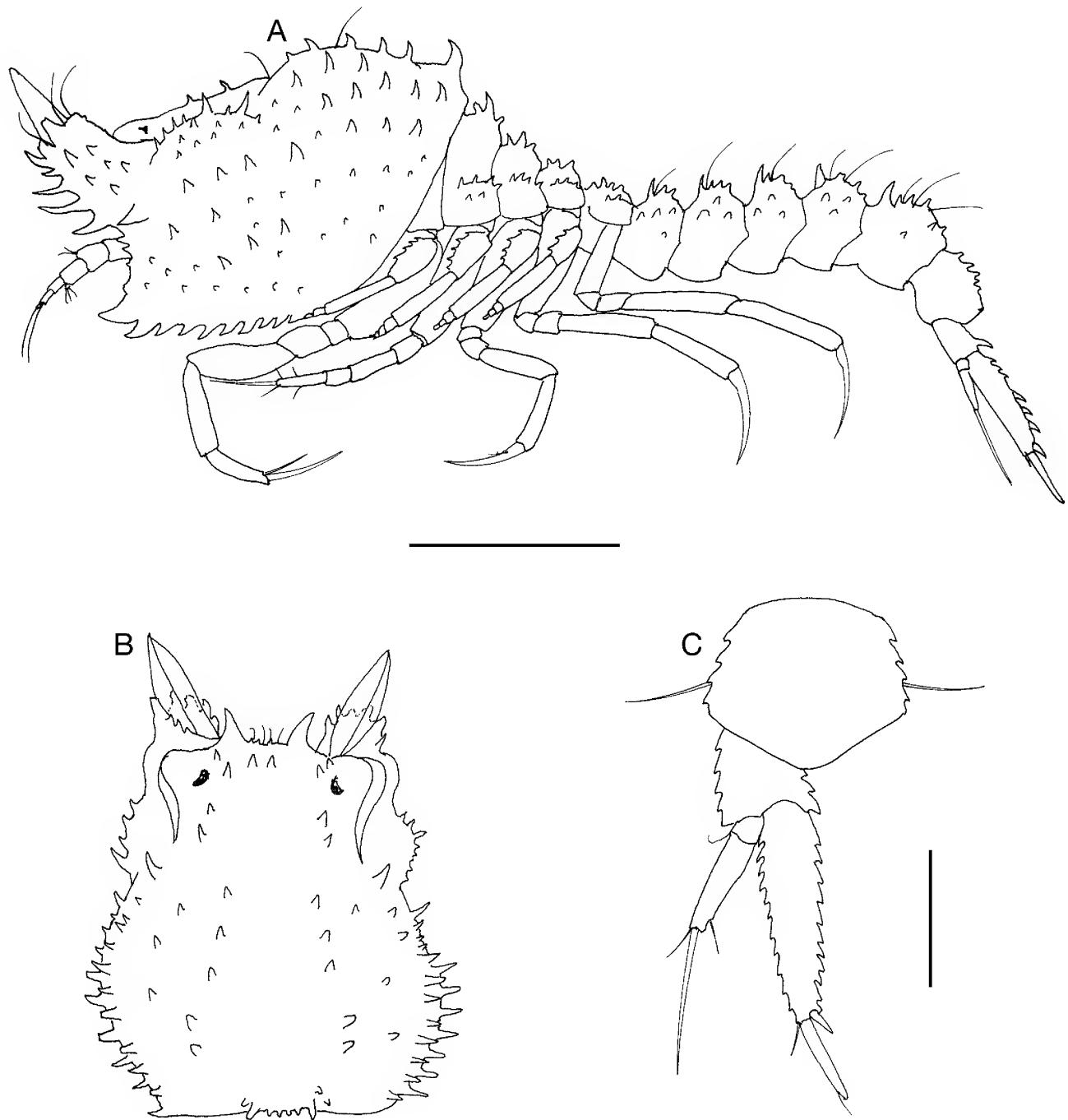


Figure 49. *Schizotrema bifrons* Hale, 1936. Male (A) body, lateral view; (B) carapace, dorsal view; (C) uropod. Scales: A, B 0.3 mm; C 0.1 mm.

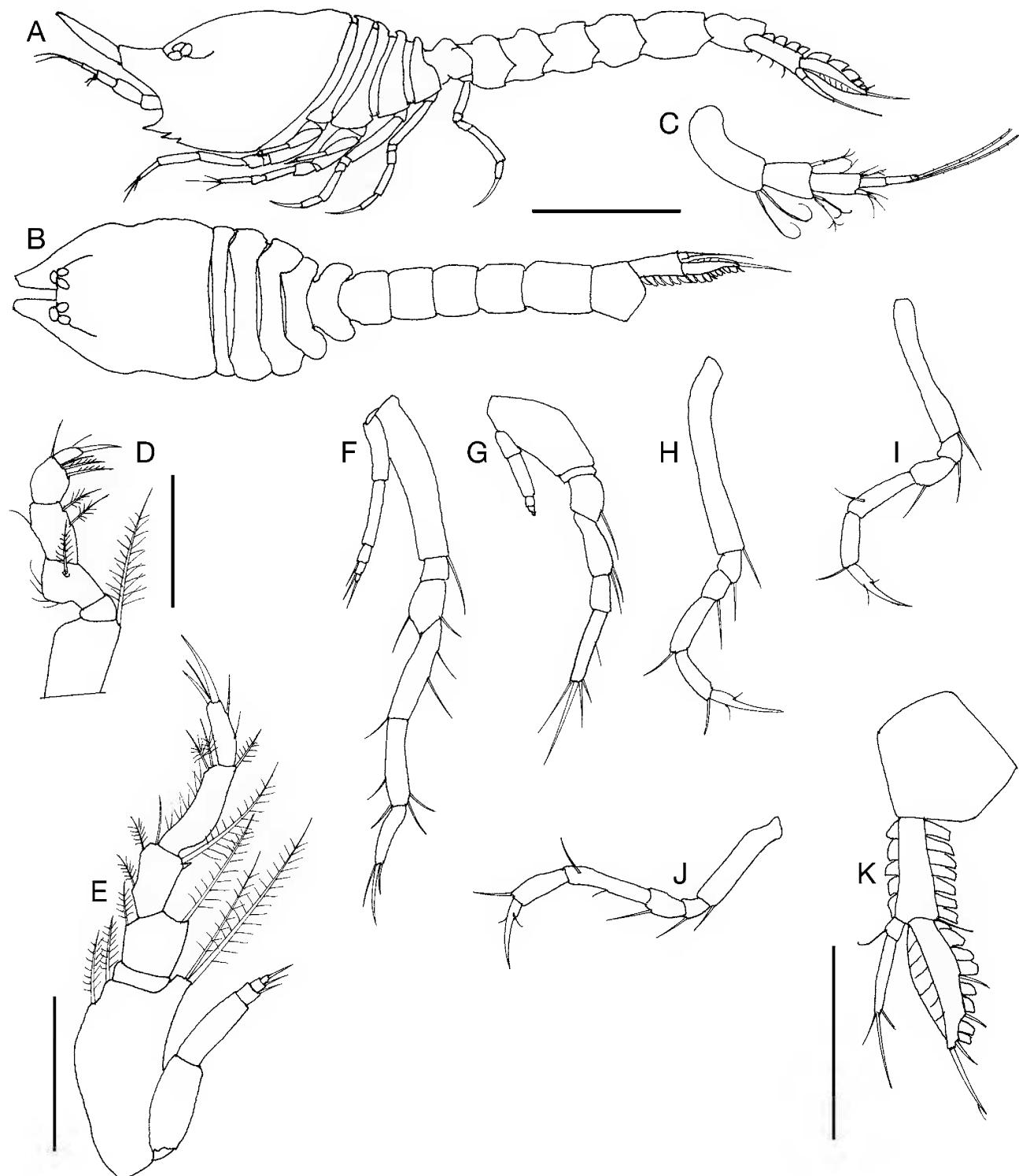


Figure 50. *Schizotrema dumitrii* sp. nov. Holotype female (A) body, lateral view; (B) body, drosal view; (C) antenna 1; (D) maxilliped 2; (E) maxilliped 3; (F) pereopod 1; (G) pereopod 2; (H) pereopod 3; (I) pereopod 4; (J) pereopod 5; (K) uropod. Scales: A 1 mm; B 1 mm; C 0.5 mm; D 0.3; E-G 0.3; H-J 0.5 mm.

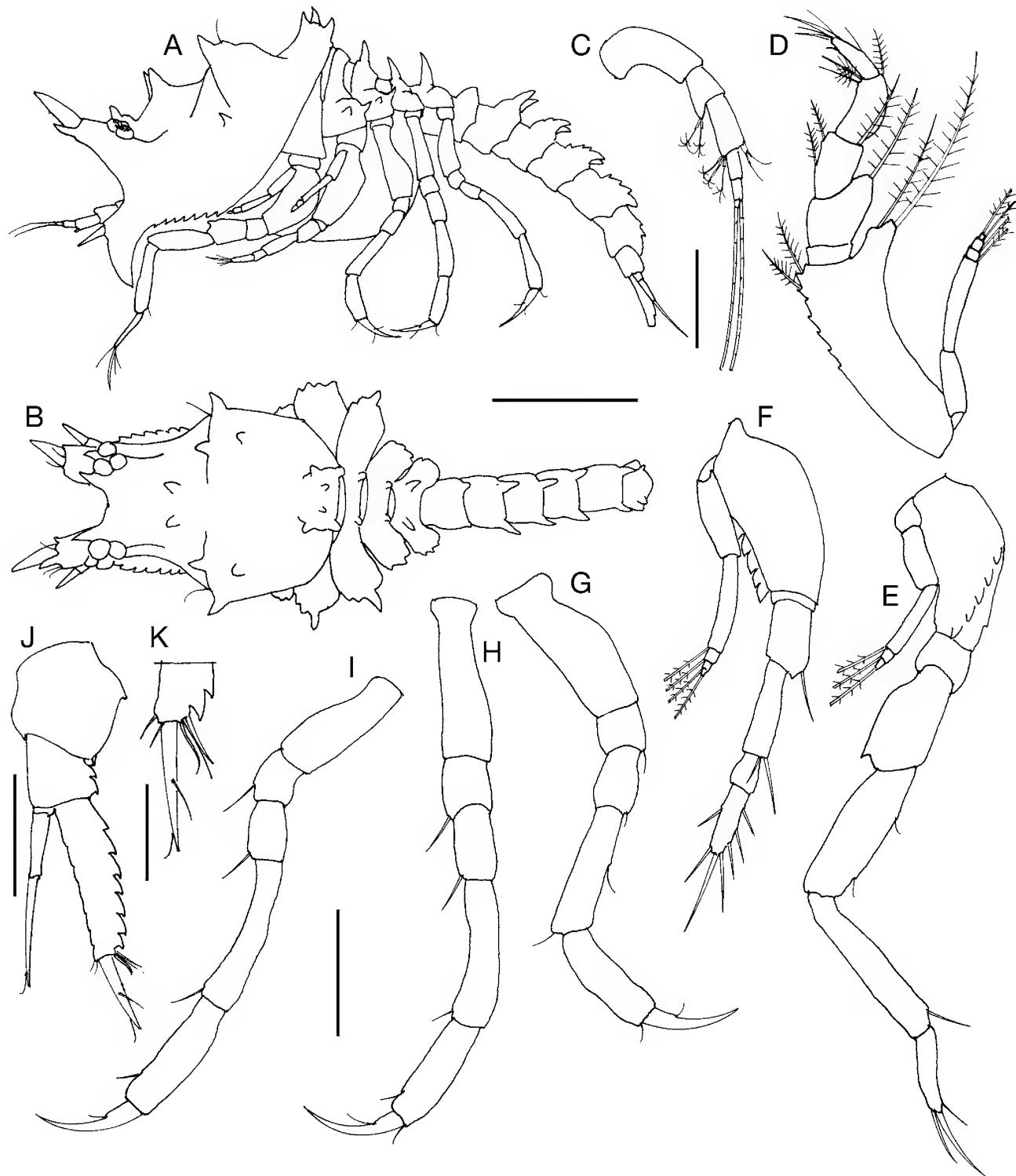


Figure 51. *Schizotrema leswatlingi* sp. nov. Holotype female (A) body, lateral view; (B) body, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod; (K) tip of uropodal endopod, detail. Scales: A,B 0.3 mm; C 0.1 mm; D–J 0.1 mm; K 0.1 mm.

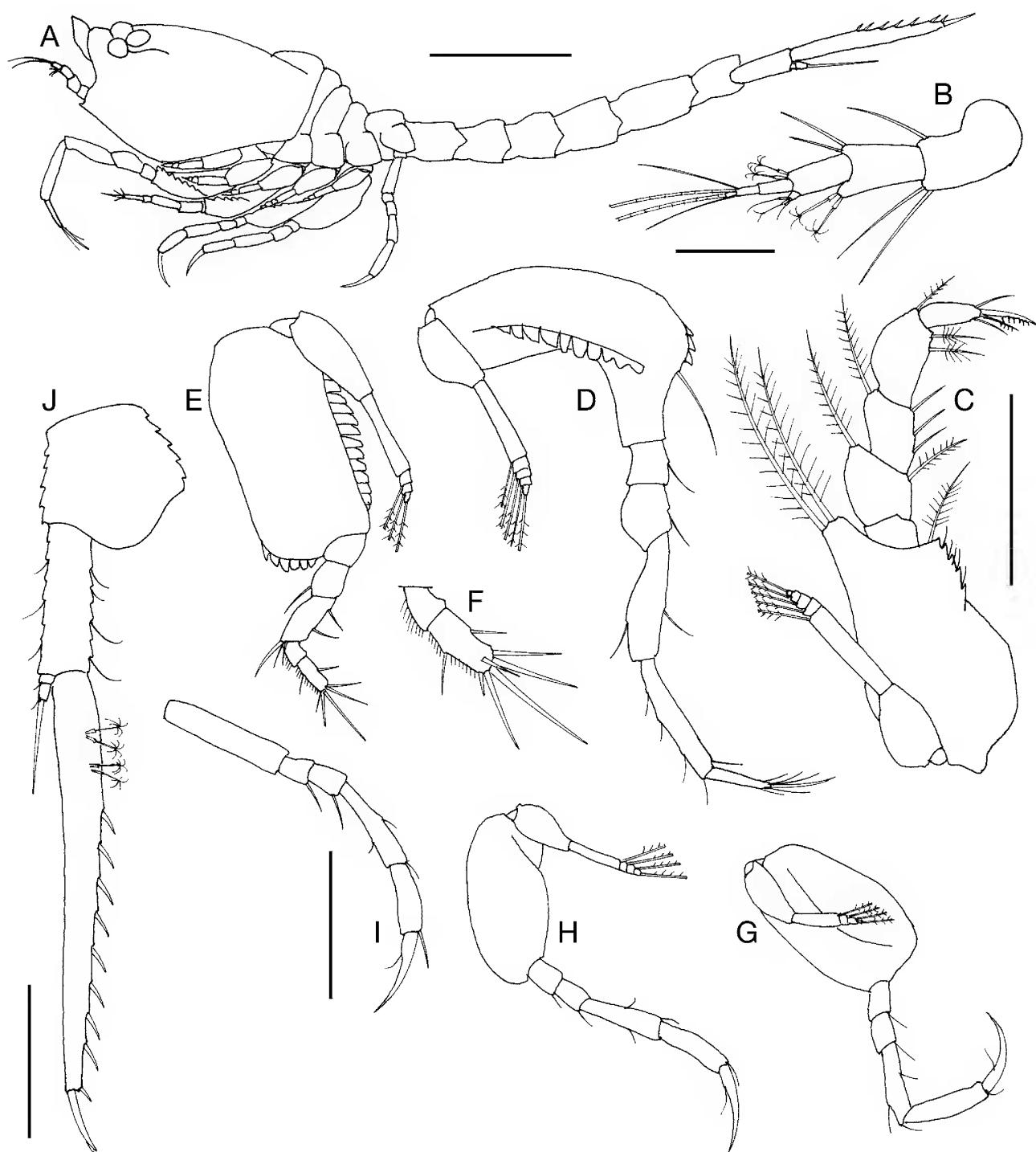


Figure 52. *Schizotrema radui* sp. nov. Holotype male (A) body, lateral view; (B) antenna 1; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 2 dactylus, magnified; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 0.5 mm; B 0.1 mm; C 0.2 mm; D–H 0.3 mm; I 0.2 mm.

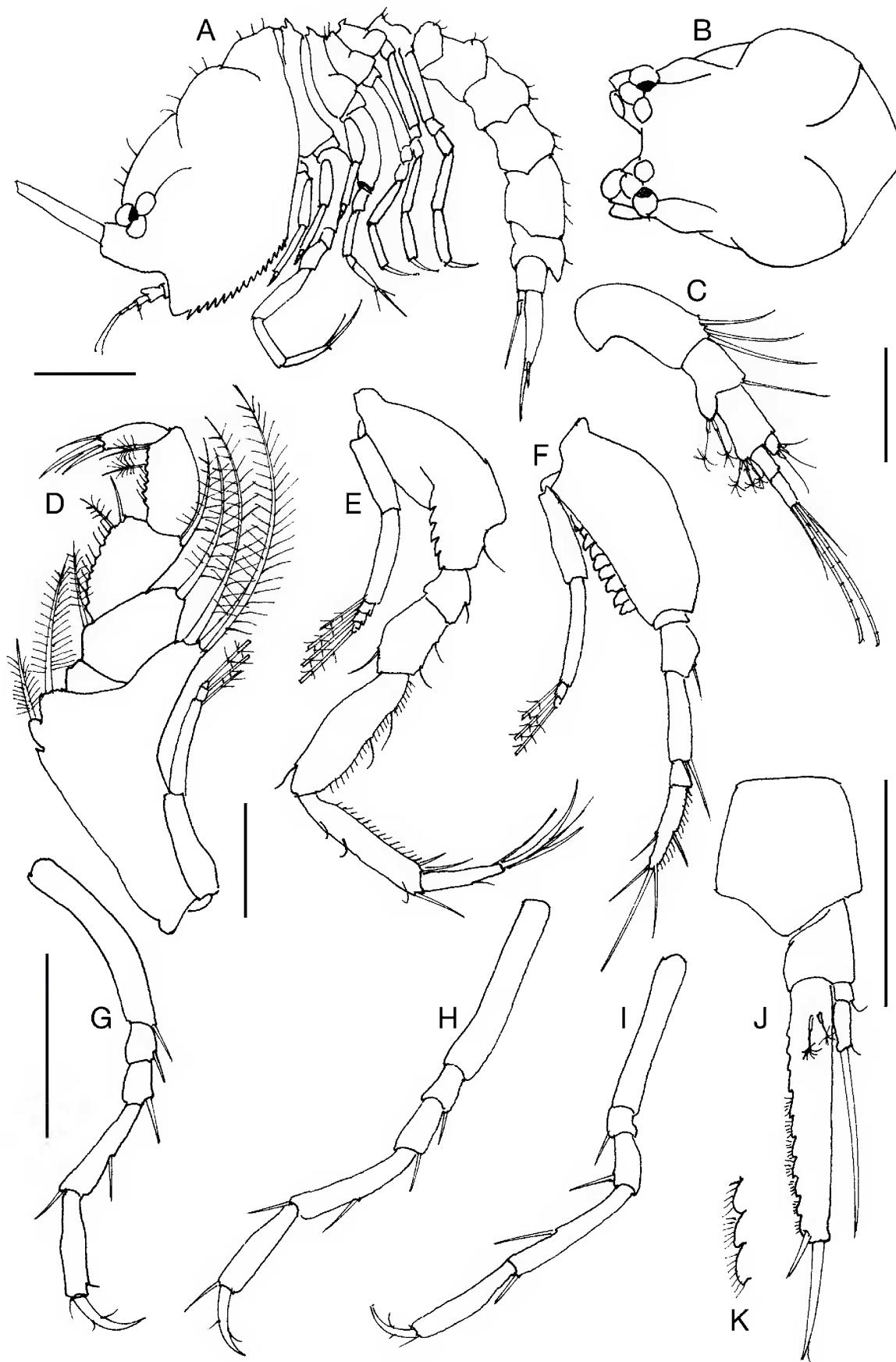


Figure 53. *Schizotrema zimmeri* sp. nov. Paratype female (A), body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod; (K) uropodal endopod medial margin, detail. Scales: A,B 0.25 mm; C,D, 0.1 mm; E-I, 0.2 mm; J, 0.2 mm; K 0.1.

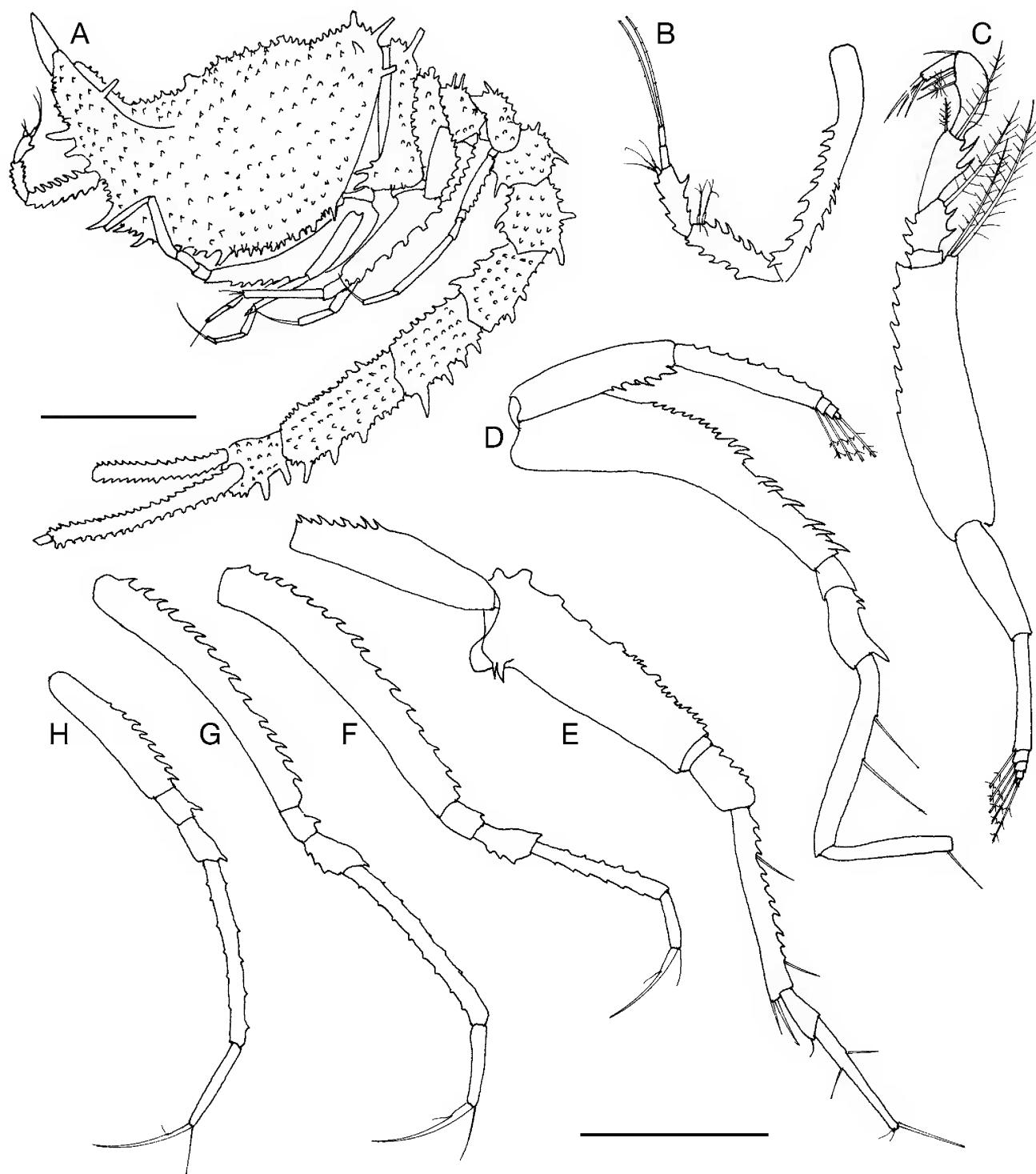


Figure 54. *Styloptocuma anae* sp. nov. Holotype female (A) body, lateral view; (B) antenna 1; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 3; (G) pereopod 4; (H) pereopod 5. Scales: A 1 mm; B-H 0.5 mm.

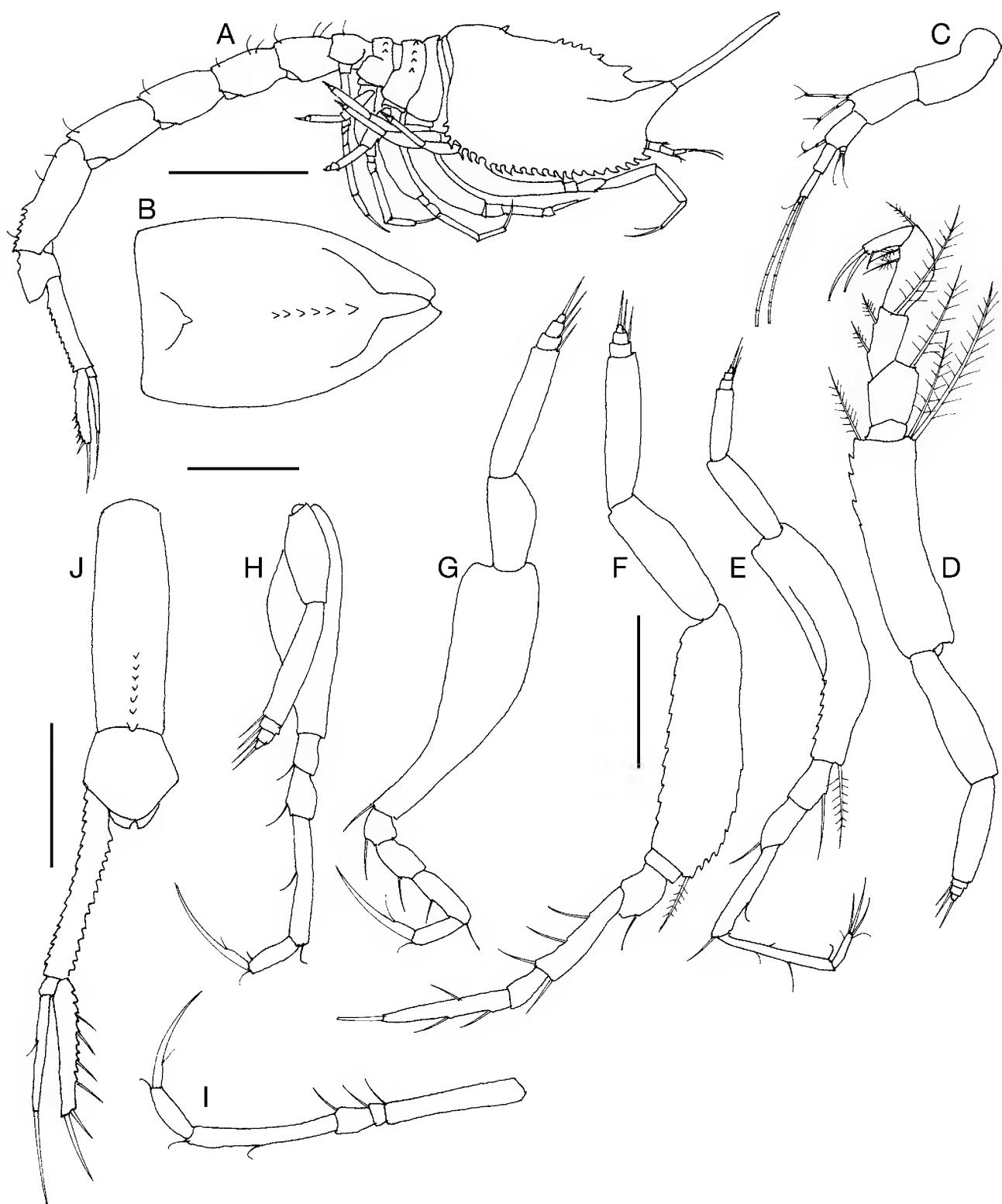


Figure 55. *Styloptocuma angelae* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A 0.5 mm; B 0.3 mm; C,D,F–I 0.2 mm; E,J 0.3 mm.

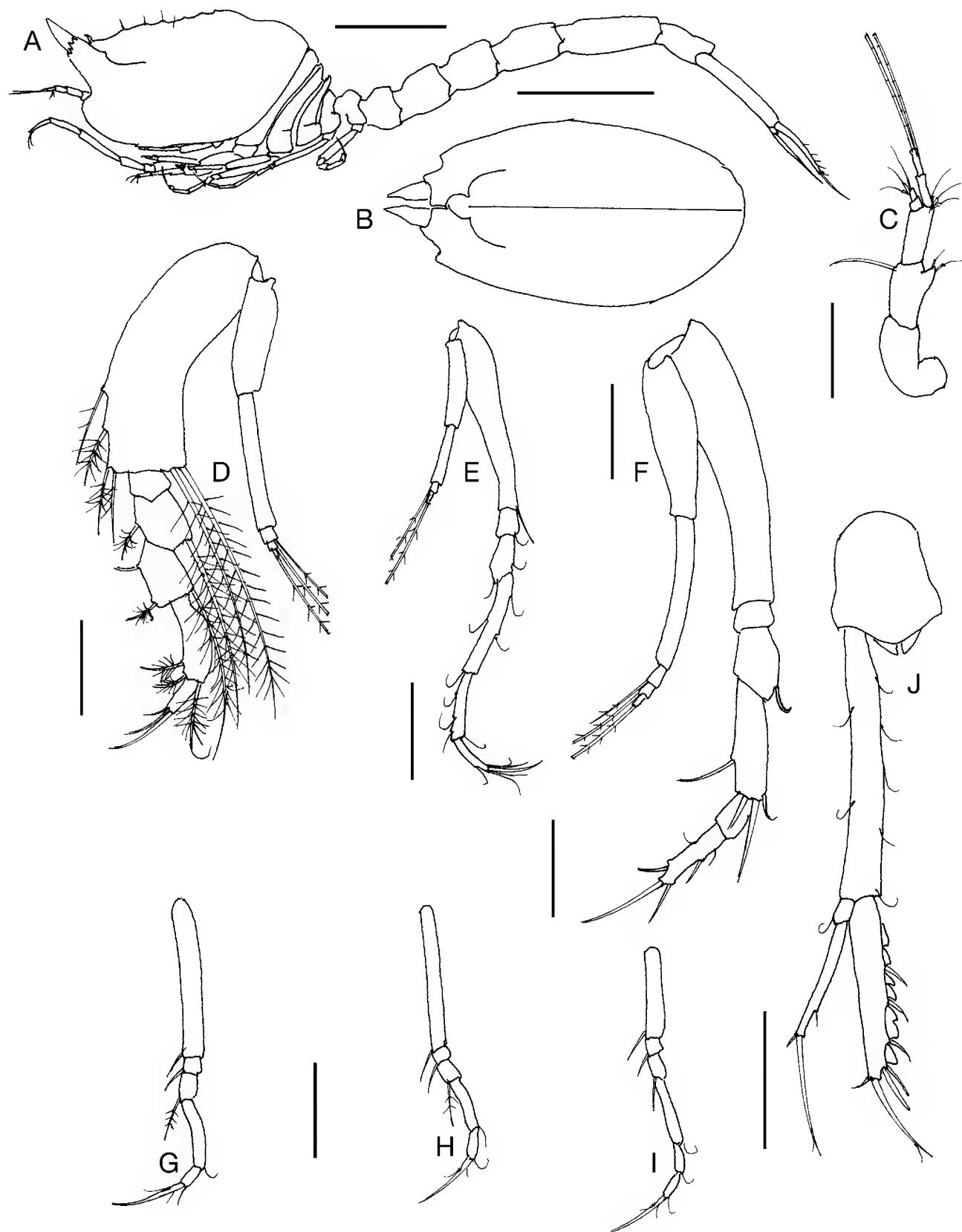


Figure 56. *Styloptocumaa aurorae* sp. nov. Holotype female (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) pereopod 5; (J) uropod. Scales: A, B, 0.5; C, 0.1; D, F, 0.1; E, G-I, 0.1; J, 0.2.

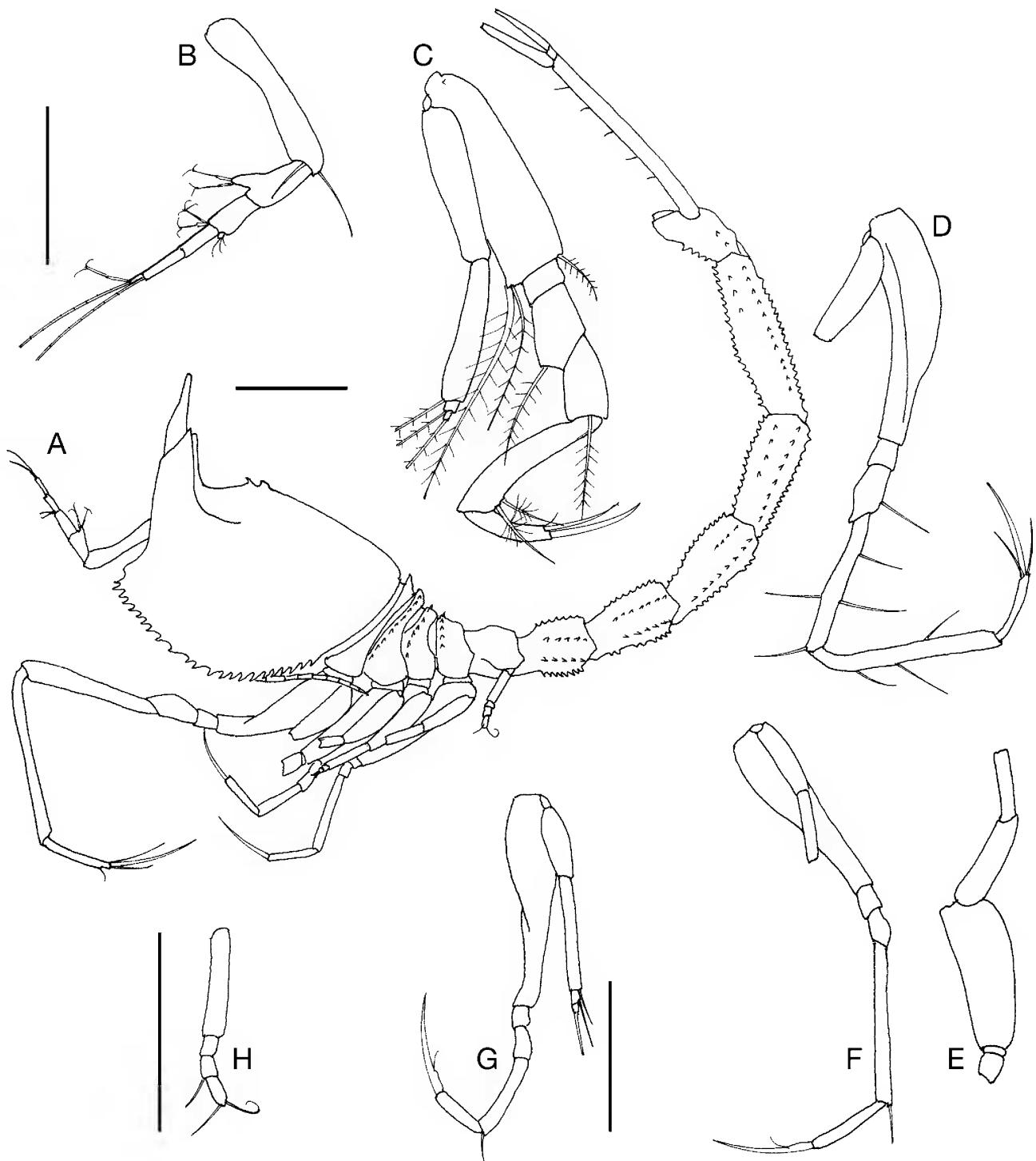


Figure 57. *Styloptocuma halei* sp. nov. Holotype male (A) body, lateral view; (B) antenna 1; (C) maxilliped 3; (D) pereopod 1; (E) pereopod 2; (F) pereopod 3; (G) pereopod 4; (H) pereopod 5. Scales: A 0.3 mm; B 0.2 mm; C, H 0.2 mm; D–G 0.3 mm.

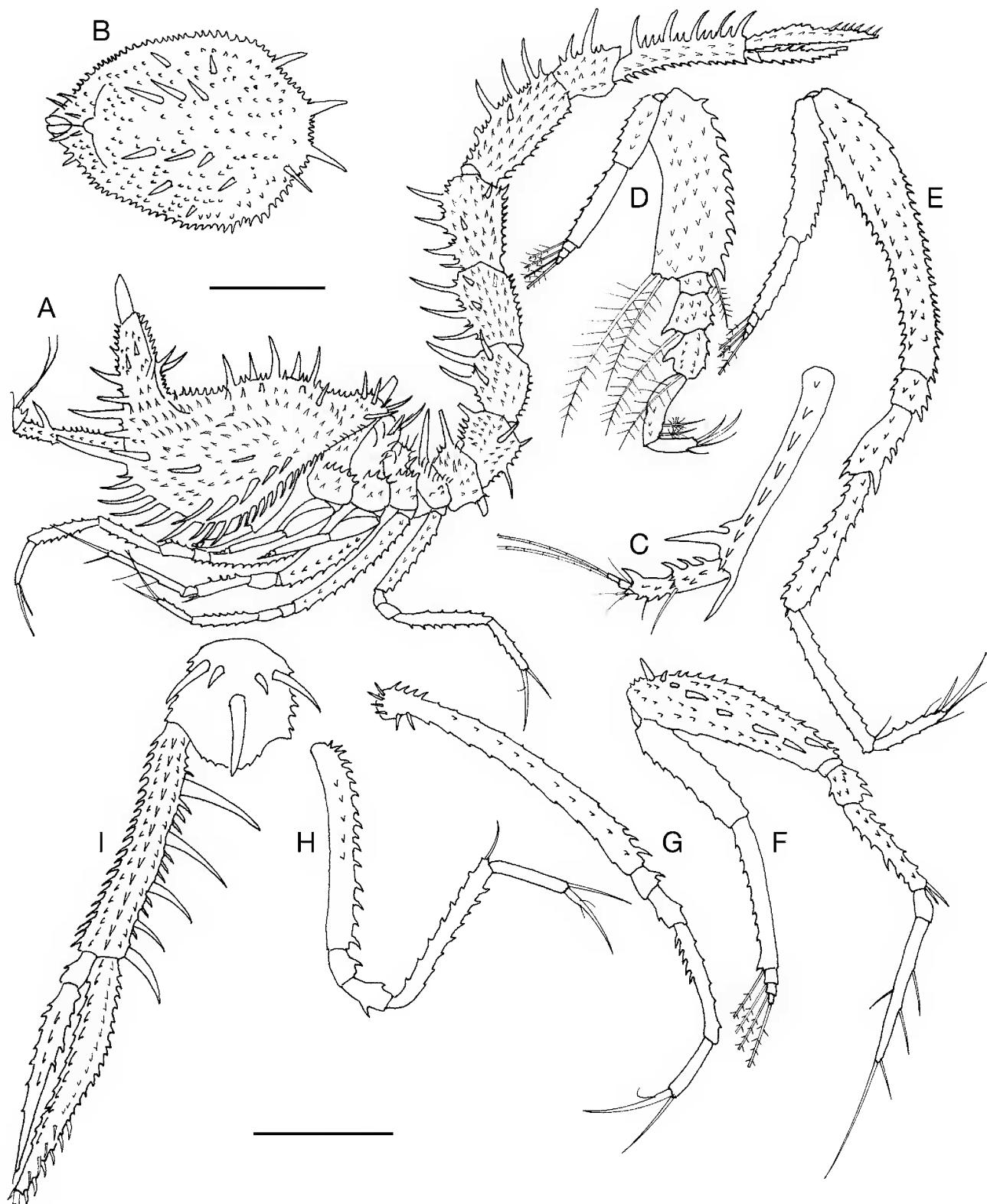


Figure 58. *Styloptocuma* sp. *postanca* (A) body, lateral view; (B) carapace, dorsal view; (C) antenna 1; (D) maxilliped 3; (E) pereopod 1; (F) pereopod 2; (G) pereopod 3; (H) pereopod 4; (I) uropod. Scales: A,B 0.5 mm; C–I 0.3 mm.

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## Supplementary data

Australian Museum Cumacea (Crustacea) specimen collection data is published separately; whereas all holotype data is published here in the present work in full. The distribution of each species is summarized here but given in full in the supplementary dataset. The dataset is derived from the Australian Museum collection management database *EMu* with assistance from H. E. Stoddart (May 2017):

Petrescu, I. 2018. Collection data for Australian Museum, Sydney, family Nannastacidae specimens (Crustacea, Cumacea). *figshare*

<https://doi.org/10.6084/m9.figshare.5947444.v1>

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